Locator Berechnung

Quelle: https://www.giangrandi.org/electronics/radio/qthloccalc.shtml

QTH locator calculator img { border:none; vertical-align:middle; } table { border:none; } table td { border:none; vertical-align:top; text-align:left; } .table_with_border { border-style:outset; border-width:1px; border-spacing:2px; } .table_with_border td { border-style:inset; border-width:1px; vertical-align:top; text-align:left; } .table_footer { border:none; width:100%; text-align:center; } .table_footer td { border:none; text-align:center; }

QTH locator calculator

Degrees-minutes-seconds format:

Latitude: [ ] [ ] ° [ ] ' [ ] "

Longitude: [ ] [ ] ° [ ] ' [ ] "

Convert

Decimal format:

Latitude: [ ] ° Positive: North, negative: South.

Longitude [ ] ° Positive: East, negative: West.

Convert

QTH locator:

Locator string: [ ]

Convert

Get current location

Auch eine gute Quelle um die Entfernung zwischen zwei Locator's zu berechnen
https://www.karhukoti.com/Maidenhead-Grid-Square-Locator

```
<html lang="en">

<head>
<meta http-equiv="content-type" content="text/html; charset=UTF-8" />
<meta name="author" content="Iacopo Giangrandi" />
<title>QTH locator calculator</title>
<style>
body { background-color:#c0c0c0; color:#000000; }
img { border:none; vertical-align:middle; }
table { border:none; }
table td { border:none; vertical-align:top; text-align:left; }
.table_with_border { border-style:outset; border-width:1px; border-
spacing:2px; }
.table_with_border td { border-style:inset; border-width:1px; vertical-
align:top; text-align:left; }
.table_footer { border:none; width:100%; text-align:center; }
.table_footer td { border:none; text-align:center; }
</style>
```

```
</head>

<body>
<!-- Written by Iacopo Giangrandi, http://www.giangrandi.ch -->
<h1>QTH locator calculator</h1>
<hr />

<form id="qth_locator">
<table class=table_with_border>
<tr>
    <td colspan=3><b>Degrees-minutes-seconds format:</b></td>
</tr>
<tr>
    <td style="text-align:right;">Latitude:</td>
    <td><input size="1" id="lat_NS" type="text" /> 
        <input size="3" id="lat_deg" type="text" /> &deg;
        <input size="3" id="lat_min" type="text" /> '
        <input size="8" id="lat_sec" type="text" /> &quot;</td>
    <td rowspan=2 style="vertical-align:middle;"><input id="CalculateQTH"
value="Convert" onclick="return cmd_calculate_qth_dec()" type="button"
/></td>
</tr>
<tr>
    <td style="text-align:right;">Longitude:</td>
    <td><input size="1" id="lon_EW" type="text" /> 
        <input size="3" id="lon_deg" type="text" /> &deg;
        <input size="3" id="lon_min" type="text" /> '
        <input size="8" id="lon_sec" type="text" /> &quot;</td>
</tr>
<tr>
    <td colspan=3><b>Decimal format:</b></td>
</tr>
<tr>
    <td style="text-align:right;">Latitude:</td>
    <td><input size="10" id="lat_dec" type="text"
/> &deg;  Positive: North, negative: South.</td>
    <td rowspan=2 style="vertical-align:middle;"><input id="CalculateQTHbis"
value="Convert" onclick="return cmd_calculate_qth_dms()" type="button"
/></td>
</tr>
<tr>
    <td style="text-align:right;">Longitude</td>
    <td><input size="10" id="lon_dec" type="text"
/> &deg;  Positive: East, negative: West.</td>
</tr>
<tr>
    <td colspan=3><b>QTH locator:</b></td>
</tr>
<tr>
    <td>Locator string:</td>
```

```
    <td><input size="10" id="qth_loc" type="text" /></td>
    <td><input id="CalculateLatLon" value="Convert" onclick="return
cmd_calculate_dec_dms()" type="button" /></td>
</tr>
<tr>
    <td colspan=3><input id="get_location" onclick="return
cmd_get_location()" type=button value="Get current location" /></td>
</tr>
</table>
</form>
<hr />

<script>
<!--

// ------------------------------------------------------------------------
-
// A few points to check if the algorithm works:
// N 48.396, E 11.458, JN58rj
// S 30.688, E 25.208, KF29oh
// S 47.229, W 67.625, FE62es
// N 45.021, W 117.458, DN15ga
// ------------------------------------------------------------------------
-



var str_chr_up = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";                          //
Constants.
var str_chr_lo = "abcdefghijklmnopqrstuvwxyz";
var str_num = "0123456789";



// ------------------------------------------------------------------------
-



function cmd_calculate_qth_dec()
{
    var lat, lat_NS, lat_deg, lat_min, lat_sec;
    var lon, lon_EW, lon_deg, lon_min, lon_sec
    var qth;

    lat_NS = document.getElementById('lat_NS').value;           // Get data
from the form.
    lat_deg = document.getElementById('lat_deg').value;
    lat_min = document.getElementById('lat_min').value;
    lat_sec = document.getElementById('lat_sec').value;
    lon_EW = document.getElementById('lon_EW').value;
```

```
    lon_deg = document.getElementById('lon_deg').value;
    lon_min = document.getElementById('lon_min').value;
    lon_sec = document.getElementById('lon_sec').value;

    lat_NS = lat_NS.toUpperCase();
    lon_EW = lon_EW.toUpperCase();


    if ((lat_NS != "N") && (lat_NS != "S"))                    // Check for
valid latitude.
    {
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert('Invalid latitude: only "N" (North) or "S" (South)');
        return(1);
    }

    if (isNaN(lat_deg) || (lat_deg > 90) || (lat_deg < 0) || (lat_deg == "")
|| (lat_deg != Math.floor(lat_deg)))
    {
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Invalid latitude: please enter degrees between 0 and 90
(integer)");
        return(1);
    }

    if (isNaN(lat_min) || (lat_min >= 60) || (lat_min < 0) || (lat_min ==
"") || (lat_min != Math.floor(lat_min)))
    {
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Invalid latitude: please enter minutes between 0 and 59
(integer)");
        return(1);
    }

    if (isNaN(lat_sec) || (lat_sec >= 60) || (lat_sec < 0) || (lat_sec ==
""))
    {
        document.getElementById('lat_sec').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
```

```
        alert("Invalid latitude: please enter seconds between 0 and 60");
        return(1);
    }

    if ((lon_EW != "E") && (lon_EW != "W"))                    // Check for
valid longitude.
    {
        document.getElementById('lon_EW').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert('Invalid longitude: only "E" (East) or "W" (West)');
        return(1);
    }

    if (isNaN(lon_deg) || (lon_deg > 180) || (lon_deg < 0) || (lon_deg ==
"") || (lon_deg != Math.floor(lon_deg)))
    {
        document.getElementById('lon_deg').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Invalid longitude: please enter degrees between 0 and 180
(integer)");
        return(1);
    }

    if (isNaN(lon_min) || (lon_min >= 60) || (lon_min < 0) || (lon_min ==
"") || (lon_min != Math.floor(lon_min)))
    {
        document.getElementById('lon_min').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Invalid longitude: please enter minutes between 0 and 59
(integer)");
        return(1);
    }

    if (isNaN(lon_sec) || (lon_sec >= 60) || (lon_sec < 0) || (lon_sec ==
""))
    {
        document.getElementById('lon_sec').value = "";
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Invalid longitude: please enter seconds between 0 and 60");
        return(1);
    }
```

```
    lat_deg = lat_deg * 1;                                          // Make sure
lat/lon are numbers.
    lat_min = lat_min * 1;
    lat_sec = lat_sec * 1;
    lon_deg = lon_deg * 1;
    lon_min = lon_min * 1;
    lon_sec = lon_sec * 1;

    lat = lat_deg + lat_min / 60 + lat_sec / 3600;              // Calculate
decimal lat/lon.
    if (lat_NS == "S")
        lat *= -1;
    lon = lon_deg + lon_min / 60 + lon_sec / 3600;
    if (lon_EW == "W")
        lon *= -1;

    document.getElementById('lat_dec').value = lat.toFixed(3);  // Display
decimal lat/lon (rounded to 3 decimal digits).
    document.getElementById('lon_dec').value = lon.toFixed(3);


    lat += 90;                                                      // Locator
lat/lon origin shift.
    lon += 180;

    qth = str_chr_up.charAt(Math.floor(lon / 20));              // 1st
digit: 20deg longitude slot.
    qth += str_chr_up.charAt(Math.floor(lat / 10));             // 2nd
digit: 10deg latitude slot.
    qth += str_num.charAt(Math.floor((lon % 20) / 2));          // 3rd
digit: 2deg longitude slot.
    qth += str_num.charAt(Math.floor((lat % 10) / 1));          // 4th
digit: 1deg latitude slot.
    qth += str_chr_lo.charAt(Math.floor((lon % 2) * (60 / 5))); // 5th
digit: 5min longitude slot.
    qth += str_chr_lo.charAt(Math.floor((lat % 1) * (60 / 2.5)));   // 6th
digit: 2.5min latitude slot.

    document.getElementById('qth_loc').value = qth;             // Display
QTH locator.

    return(0);
}



// ------------------------------------------------------------------------
-
```

```
function cmd_calculate_qth_dms()
{
    var lat, lon, qth;
    var deg, min, sec;

    lat = document.getElementById('lat_dec').value;             // Get data
from the form.
    lon = document.getElementById('lon_dec').value;

    if (isNaN(lat) || (lat > 90) || (lat < -90) || (lat == "")) // Check for
valid latitude.
    {
        document.getElementById('lat_dec').value = "";
        document.getElementById('qth_loc').value = "";
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_sec').value = "";
        document.getElementById('lon_EW').value = "";
        document.getElementById('lon_deg').value = "";
        document.getElementById('lon_min').value = "";
        document.getElementById('lon_sec').value = "";
        alert("Invalid latitude: please enter a value between -90 (S) and 90
(N) degrees");
        return(1);
    }

    if (isNaN(lon) || (lon > 180) || (lon < -180) || (lon == ""))   // Check
for valid longitude.
    {
        document.getElementById('lon_dec').value = "";
        document.getElementById('qth_loc').value = "";
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_sec').value = "";
        document.getElementById('lon_EW').value = "";
        document.getElementById('lon_deg').value = "";
        document.getElementById('lon_min').value = "";
        document.getElementById('lon_sec').value = "";
        alert("Invalid longitude: please enter a value between -180 (W) and
180 (E) degrees");
        return(1);
    }

    lat = lat * 1;                                              // Make sure
lat/lon are numbers.
    lon = lon * 1;

    deg = Math.floor(Math.abs(lat));                            // Convert
latitude to deg/min/sec.
```

```
    min = Math.floor((Math.abs(lat) - deg) * 60);
    sec = Math.floor(((Math.abs(lat) - deg) * 60 - min) * 60);
    if (lat >= 0)
        document.getElementById('lat_NS').value = "N";
    else
        document.getElementById('lat_NS').value = "S";
    document.getElementById('lat_deg').value = deg;
    document.getElementById('lat_min').value = (min < 10 ? "0" : "") +
min.toString();
    document.getElementById('lat_sec').value = (sec < 10 ? "0" : "") +
sec.toString();

    deg = Math.floor(Math.abs(lon));                             // Convert
longitude to deg/min/sec.
    min = Math.floor((Math.abs(lon) - deg) * 60);
    sec = Math.floor(((Math.abs(lon) - deg) * 60 - min) * 60);
    if (lon >= 0)
        document.getElementById('lon_EW').value = "E";
    else
        document.getElementById('lon_EW').value = "W";
    document.getElementById('lon_deg').value = deg;
    document.getElementById('lon_min').value = (min < 10 ? "0" : "") +
min.toString();
    document.getElementById('lon_sec').value = (sec < 10 ? "0" : "") +
sec.toString();


    lat += 90;                                                   // Locator
lat/lon shift.
    lon += 180;

    qth = str_chr_up.charAt(Math.floor(lon / 20));               // 1st
digit: 20deg longitude slot.
    qth += str_chr_up.charAt(Math.floor(lat / 10));              // 2nd
digit: 10deg latitude slot.
    qth += str_num.charAt(Math.floor((lon % 20) / 2));           // 3rd
digit: 2deg longitude slot.
    qth += str_num.charAt(Math.floor((lat % 10) / 1));           // 4th
digit: 1deg latitude slot.
    qth += str_chr_lo.charAt(Math.floor((lon % 2) * (60 / 5))); // 5th
digit: 5min longitude slot.
    qth += str_chr_lo.charAt(Math.floor((lat % 1) * (60 / 2.5)));  // 6th
digit: 2.5min latitude slot.

    document.getElementById('qth_loc').value = qth;              // Display
result.

    return(0);
}
```

```
// ------------------------------------------------------------------------
-



function cmd_calculate_dec_dms()
{
    var lat, lon, qth;
    var deg, min, sec;

    qth = document.getElementById('qth_loc').value;             // Get data
from the form.

    if ((qth.length != 4) && (qth.length != 6))                 // Verify
string length: only 4 and 6 character strings are accepted.
    {
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_sec').value = "";
        document.getElementById('lon_EW').value = "";
        document.getElementById('lon_deg').value = "";
        document.getElementById('lon_min').value = "";
        document.getElementById('lon_sec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Please enter a valid 4 or 6 characters QTH locator.");
        return(1);
    }

    qth = qth.toUpperCase();                                    // Convert
to upper case.

    if ((qth.charAt(0) < 'A') || (qth.charAt(0) > 'S') || (qth.charAt(1) <
'A') || (qth.charAt(1) > 'S') ||
        (qth.charAt(2) < '0') || (qth.charAt(2) > '9') || (qth.charAt(3) <
'0') || (qth.charAt(3) > '9'))
    {                                                           // Make sure
the locator is composed by twho characters and two digits.
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_sec').value = "";
        document.getElementById('lon_EW').value = "";
        document.getElementById('lon_deg').value = "";
        document.getElementById('lon_min').value = "";
        document.getElementById('lon_sec').value = "";
        document.getElementById('qth_loc').value = "";
```

```
        alert("Please enter a valid 4 or 6 characters QTH locator.");
        return(1);
    }

    if ((qth.length == 6) && (qth.charAt(4) < 'A') || (qth.charAt(4) > 'X')
||
        (qth.charAt(5) < 'A') || (qth.charAt(5) > 'X'))         // For 6
characters locators, make sure the last two are letters.
    {
        document.getElementById('lat_dec').value = "";
        document.getElementById('lon_dec').value = "";
        document.getElementById('lat_NS').value = "";
        document.getElementById('lat_deg').value = "";
        document.getElementById('lat_min').value = "";
        document.getElementById('lat_sec').value = "";
        document.getElementById('lon_EW').value = "";
        document.getElementById('lon_deg').value = "";
        document.getElementById('lon_min').value = "";
        document.getElementById('lon_sec').value = "";
        document.getElementById('qth_loc').value = "";
        alert("Please enter a valid 4 or 6 characters QTH locator.");
        return(1);
    }

    lat = str_chr_up.indexOf(qth.charAt(1)) * 10;               // 2nd
digit: 10deg latitude slot.
    lon = str_chr_up.indexOf(qth.charAt(0)) * 20;               // 1st
digit: 20deg longitude slot.
    lat += str_num.indexOf(qth.charAt(3)) * 1;                  // 4th
digit: 1deg latitude slot.
    lon += str_num.indexOf(qth.charAt(2)) * 2;                  // 3rd
digit: 2deg longitude slot.
    if (qth.length == 6)
    {
        lat += str_chr_up.indexOf(qth.charAt(5)) * 2.5 / 60;    // 6th
digit: 2.5min latitude slot.
        lon += str_chr_up.indexOf(qth.charAt(4)) * 5 / 60;      // 5th
digit: 5min longitude slot.
    }

    if (qth.length == 4)                                        // Get
coordinates of the center of the square.
    {
        lat += 0.5 * 1;
        lon += 0.5 * 2;
    }
    else
    {
        lat += 0.5 * 2.5 / 60;
        lon += 0.5 * 5 / 60;
```

```
    }

    lat -= 90;                                                  // Locator
lat/lon origin shift.
    lon -= 180;

    document.getElementById('lat_dec').value = lat.toFixed(3);  // Display
result (rounded to 3 decimal digits).
    document.getElementById('lon_dec').value = lon.toFixed(3);

    deg = Math.floor(Math.abs(lat));                            // Convert
latitude to deg/min/sec.
    min = Math.floor((Math.abs(lat) - deg) * 60);
    sec = Math.floor(((Math.abs(lat) - deg) * 60 - min) * 60);
    if (lat >= 0)
        document.getElementById('lat_NS').value = "N";
    else
        document.getElementById('lat_NS').value = "S";
    document.getElementById('lat_deg').value = deg;
    document.getElementById('lat_min').value = (min < 10 ? "0" : "") +
min.toString();
    document.getElementById('lat_sec').value = (sec < 10 ? "0" : "") +
sec.toString();

    deg = Math.floor(Math.abs(lon));                            // Convert
longitude to deg/min/sec.
    min = Math.floor((Math.abs(lon) - deg) * 60);
    sec = Math.floor(((Math.abs(lon) - deg) * 60 - min) * 60);
    if (lon >= 0)
        document.getElementById('lon_EW').value = "E";
    else
        document.getElementById('lon_EW').value = "W";
    document.getElementById('lon_deg').value = deg;
    document.getElementById('lon_min').value = (min < 10 ? "0" : "") +
min.toString();
    document.getElementById('lon_sec').value = (sec < 10 ? "0" : "") +
sec.toString();

    return(0);
}



// ---------------------------------------------------------------------
-
// Geolocation functions.
// ---------------------------------------------------------------------
-
```

```
// This function, called by the "Get current location" button, will try to
// find the current coordinates, if supported by the browser.
// If the browser supports geolocation, the function show_position() is
// called, if not, show_error() is called instead.
function cmd_get_location()
{
    document.getElementById('lat_dec').value = "";              // Erase
current coordinates.
    document.getElementById('lon_dec').value = "";

    document.getElementById('lat_NS').value = "";               // Erase
corresponding results.
    document.getElementById('lat_deg').value = "";
    document.getElementById('lat_min').value = "";
    document.getElementById('lat_sec').value = "";

    document.getElementById('lon_EW').value = "";
    document.getElementById('lon_deg').value = "";
    document.getElementById('lon_min').value = "";
    document.getElementById('lon_sec').value = "";

    document.getElementById('qth_loc').value = "";

    if (navigator.geolocation)                                  // Check if
geolocation is supported.
        navigator.geolocation.getCurrentPosition(show_position, show_error);
    else
        window.alert("Geolocation is not supported by this browser.");
}



// ----------------------------------------------------------------------
-



// This function is called by the cmd_get_location() function only if the
// browser supports geolocation. It updates the coordinates field with the
// current position and calculates the coordinate conversion.
function show_position(position)
{
    document.getElementById('lat_dec').value =
position.coords.latitude.toFixed(6);
    document.getElementById('lon_dec').value =
position.coords.longitude.toFixed(6);

    cmd_calculate_qth_dms();
}
```

```
// ------------------------------------------------------------------------
-



// This function is called by cmd_get_location() when an error occurred
while
// determining the current location.
function show_error(error)
{
    switch(error.code)
    {
        case error.PERMISSION_DENIED:
            window.alert("User denied the request for Geolocation.");
            break;
        case error.POSITION_UNAVAILABLE:
            window.alert("Location information is unavailable.");
            break;
        case error.TIMEOUT:
            window.alert("The request to get user location timed out.");
            break;
        case error.UNKNOWN_ERROR:
            window.alert("An unknown error occurred.");
            break;
    }
}



// ------------------------------------------------------------------------
-



// Init form values
document.getElementById('lat_NS').value = "N";
document.getElementById('lat_deg').value = "46";
document.getElementById('lat_min').value = "57";
document.getElementById('lat_sec').value = "04";

document.getElementById('lon_EW').value = "E";
document.getElementById('lon_deg').value = "7";
document.getElementById('lon_min').value = "26";
document.getElementById('lon_sec').value = "19";

document.getElementById('lat_dec').value = "";
document.getElementById('lon_dec').value = "";

document.getElementById('qth_loc').value = "";
```

```
// ------------------------------------------------------------------------
-

// -->
</script>


</body>
</html>
```