

New First Connections on the mmWave bands:

Germany – Denmark - Sweden

mmWave DXpedition DB6NT & DK5NJ

August 9th to 11th, 2022

After the course records on the mmWave bands in March 2022, we - Michael, DB6NT and I, Matthias, DK5NJ - asked ourselves what could be the next challenge on the higher bands from 122 GHz and up. Since the summer weather with high heat and higher humidity is less suitable for distance records on the millimeter wave bands, we considered starting a DXpedition with first country connections/activations after a long break.

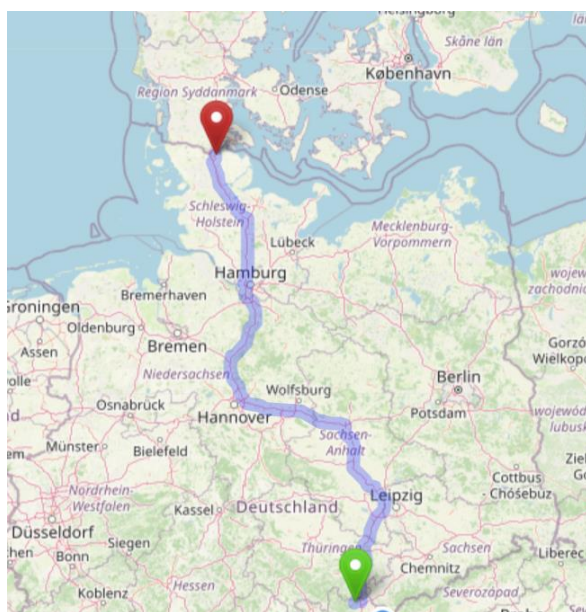
In 2016, 2017 and 2018 we already took part in larger DXpeditions and first country connections on the microwave and mmWave bands. But then somehow one or the other OM had no time, there was also this pandemic and the series was interrupted and no further activations were planned.

Our two mmWave stations covering the 122, 134 and 241 GHz bands were then further improved in the first half of 2022, e.g. B. by installing a receiving preamplifier in the station from DK5NJ and various other small optimizations. Michael then drove to the border of PA0 at the end of July and made first tests and successful reconnections together with Hans, PA0EHG.

After further considerations and discussions, we came up with the idea of making some connections from Germany to Denmark. First, we asked our radio friend Kjeld, OZ1FF for a good idea for a suitable route in his area. He lives in western Denmark but wrote to us that there would be better options over water in the eastern part of the country.

At the same time, I contacted our Swedish friend Torleif, SM7EYW. We wanted to continue to him after the Germany/Denmark connection and realize a connection OZ – SM via the Öresund. We wanted to try the 122, 134, 241 GHz and 660 nm (laser) bands. Torleif was immediately enthusiastic and researched possible radio links and locations. He also offered us to stay overnight with him in southern Sweden after the connections.

We made a plan and so it happened that on August 9th in the morning at 8:00 a.m. we drove from Upper Franconia to Flensburg. Originally, these activities were planned with two other OMs, but due to time constraints we planned the tour for two.



Source: openstreetmap.org 22.08.2022

If you have driven through half of Germany with a forecast driving time of 7 hours and then got in a traffic delay for another 2 hours, a day can be very long. Nevertheless, in the evening we arrived tired but happy in the area around Flensburg. But a hotel check-in with a drink at the bar was out of the question. We still had plans. The first connection should go from DL to OZ. For this I drove Michael to the marina in Schausende. The marina offered a perfect location for DB6NT on the shore with a good takeoff towards Denmark, [JO44SU86KA](https://www.qrz.com/db/JO44SU86KA).



The equipment with trolleys from DB6NT



The QTH of DB6NT in Schausende



DB6NT with his RIG in Schausende

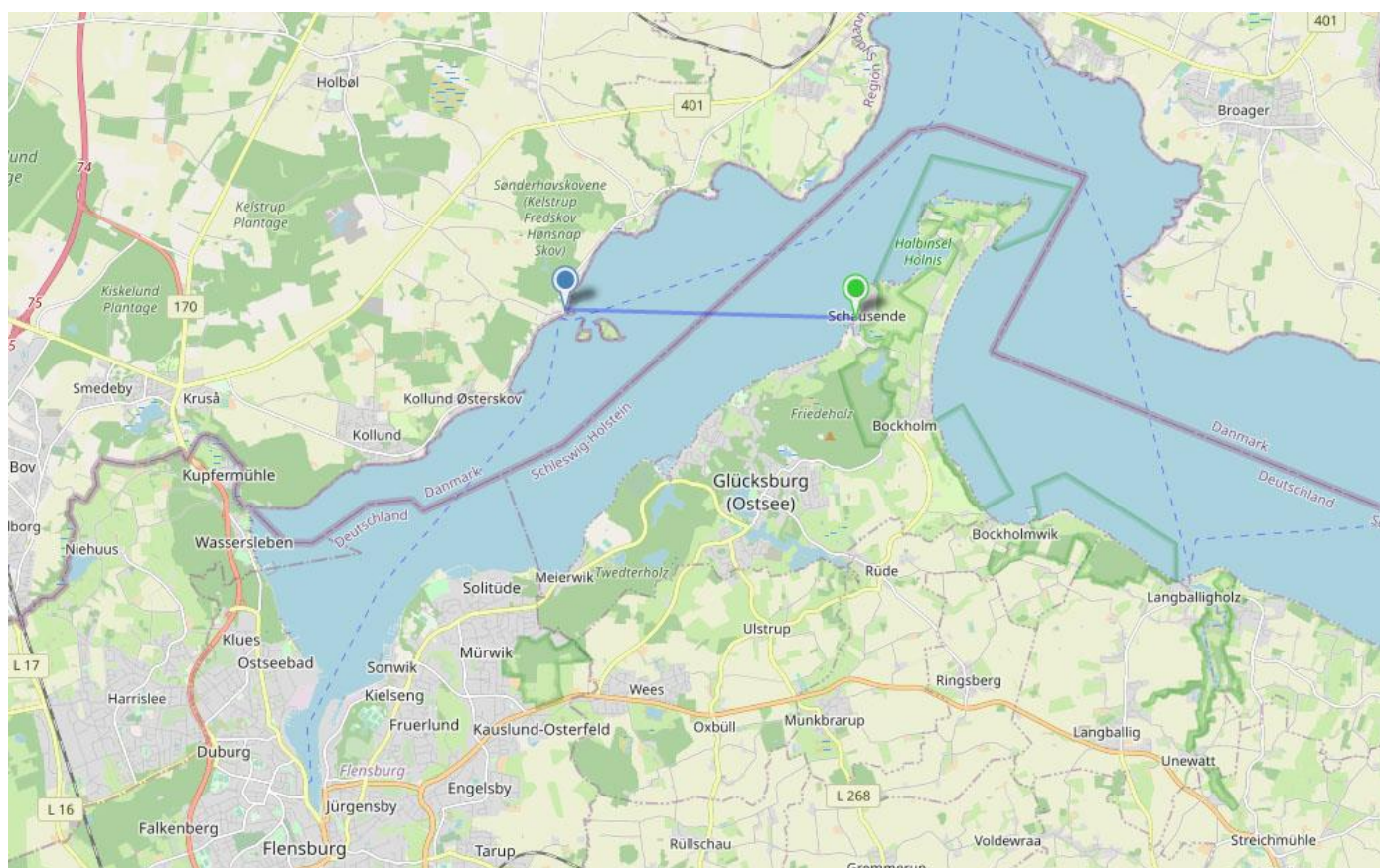
So I unloaded Michael and his equipment and then made my way towards Denmark. It's a bit of a strange feeling to abandon your partner without a car in a foreign location and then to drive across the border to another country, to places that you previously only knew from the maps of a major search engine. But it is precisely this departure into the unknown that makes portable amateur radio so interesting. At my location in Sønderhav - a parking lot that is mainly used by tourists, campers and bathers in [JO44RU96UO](https://www.qrz.com/db/JO44RU96UO) – I unloaded my station and set to work.



QTH of DK5NJ Sønderhav in [JO44RU96UO](https://www.qrz.com/db/JO44RU96UO)

Over the short distance with a direct view of the other bank, we found each other immediately and aligned the antennas with each other. The signals were exceptionally strong and so the following connections could be logged in sunny weather with an air temperature of approx. 23° Celsius:

Date	BAND	UTC	Call 1	RST 1	Locator 1	Call 2	RST 2	Locator 2	First QSO	Distance
09.08.2022	122 GHz	16:08	OZ/DK5NJ	599	JO44RU96UO	DB6NT	599	JO44SU86KA	no	4.591 km (2.85 mi)
09.08.2022	134 GHz	16:14	OZ/DK5NJ	599	JO44RU96UO	DB6NT	599	JO44SU86KA	yes	4.591 km (2.85 mi)
09.08.2022	241 GHz	16:27	OZ/DK5NJ	59	JO44RU96UO	DB6NT	59	JO44SU86KA	no	4.591 km (2.85 mi)
09.08.2022	660 nm	16:52	OZ/DK5NJ	59	JO44RU96UO	DB6NT	59	JO44SU86KA	yes	4.591 km (2.85 mi)

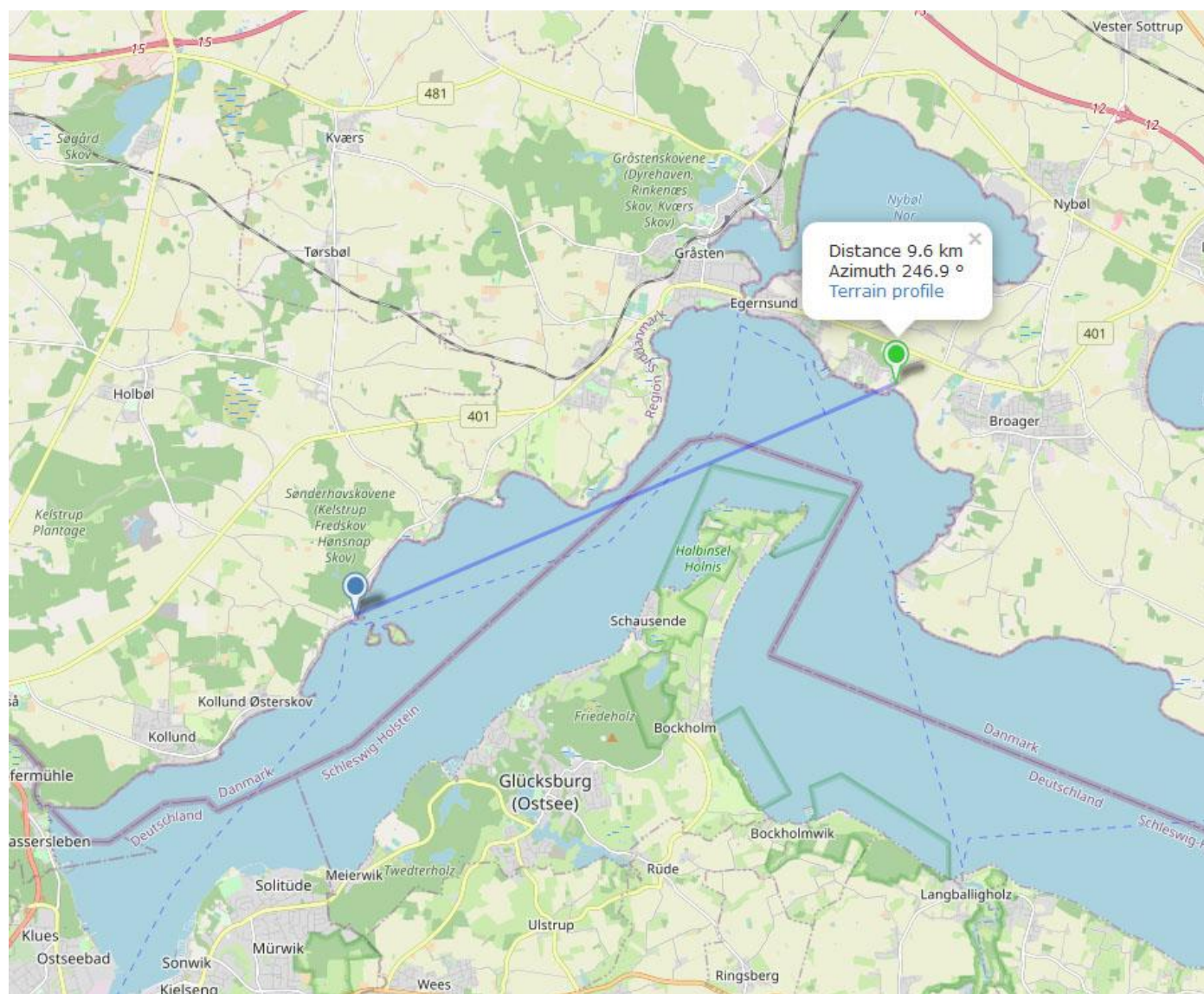


Tuesday, 09 of August 2022
DL-OZ 4.591 km

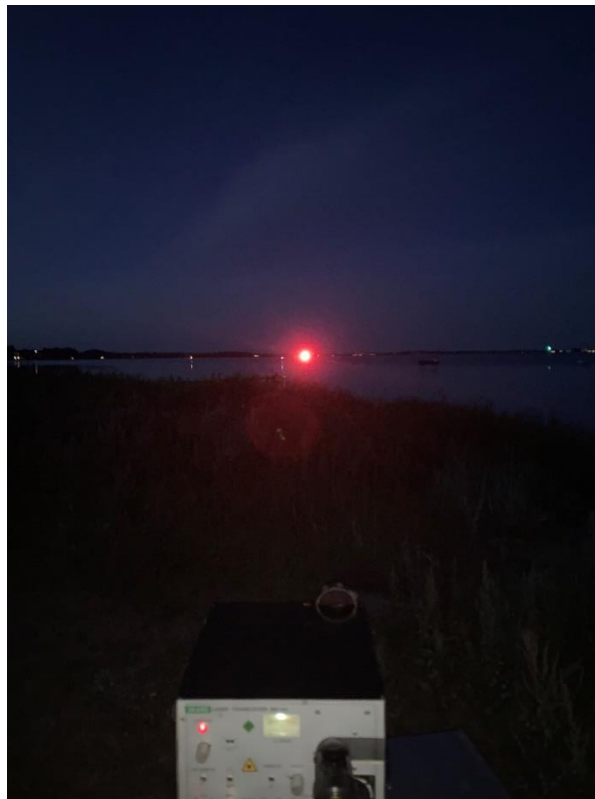
We then wanted to implement the new connections within Denmark. So, I drove back to DL and picked up Michael in Schausende. Next, I took him to [JO44TV64LR](#) and unloaded him and his equipment there. Since we had the darkness and the long arrival day behind us, I "only" drove back to Sønderhav in [JO44RU96UO](#) to my known location in order to make further connections OZ-OZ.

The signals were still very good here and the laser signal in particular was of course particularly effective after dark.

Date	BAND	UTC	Call 1	RST 1	Locator 1	Call 2	RST 2	Locator 2	First QSO	Distance
09.08.2022	122 GHz	19:42	OZ/DK5NJ	599	JO44RU96UO	OZ/DB6NT	599	JO44TV64LR	no	9.64 km (5.99 mi)
09.08.2022	134 GHz	19:45	OZ/DK5NJ	599	JO44RU96UO	OZ/DB6NT	599	JO44TV64LR	yes	9.64 km (5.99 mi)
09.08.2022	660 nm	20:04	OZ/DK5NJ	59	JO44RU96UO	OZ/DB6NT	59	JO44TV64LR	no	9.64 km (5.99 mi)



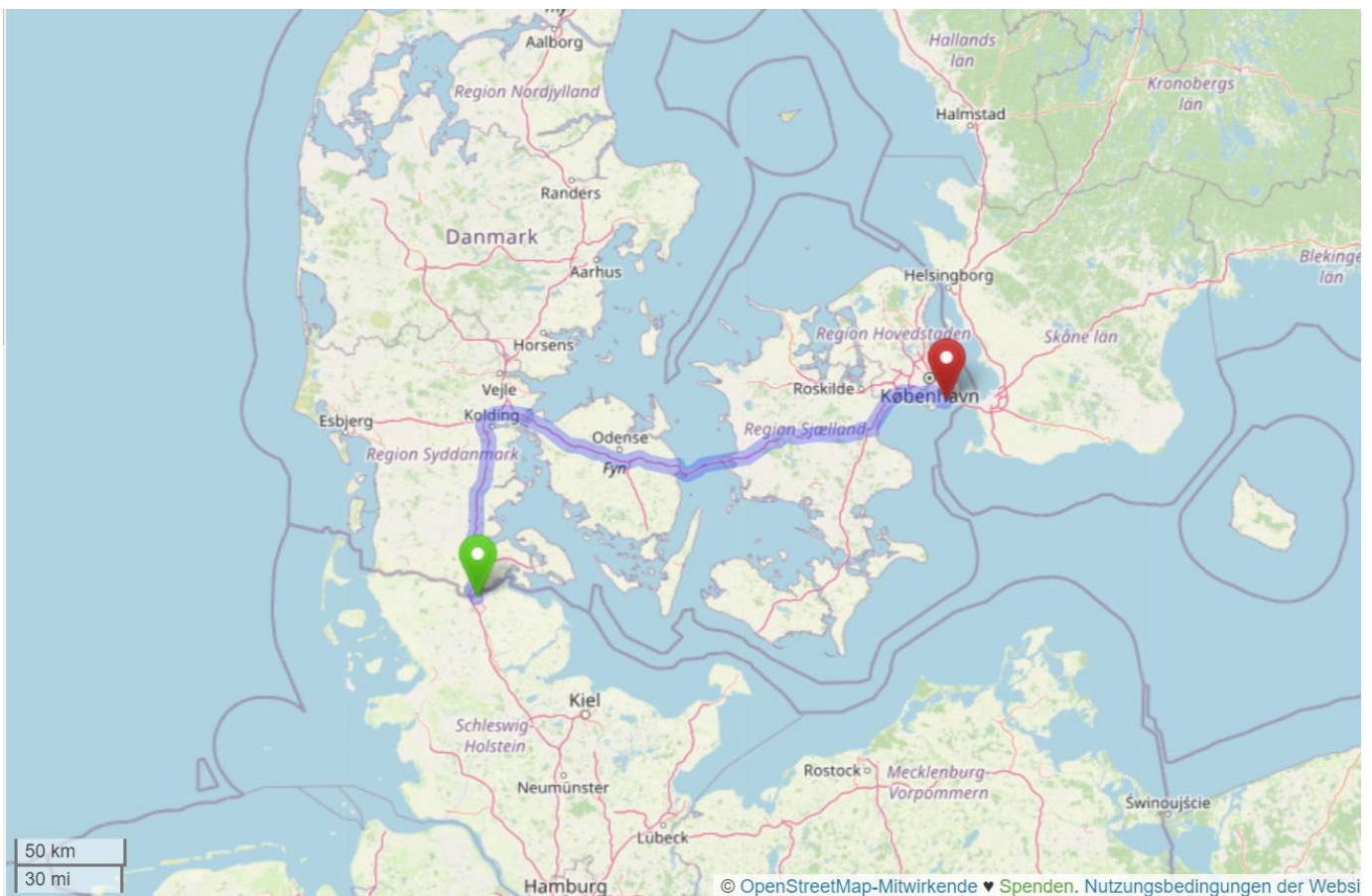
OZ-OZ 9.64 km



Laser signal of OZ/DB6NT received at OZ/DK5NJ:

After completing QSOs, there was unfortunately only a short time in the middle of the night for dinner at a well-known fast food restaurant and an after-work beer from the gas station ☺ Nevertheless, we were looking forward to the next day.

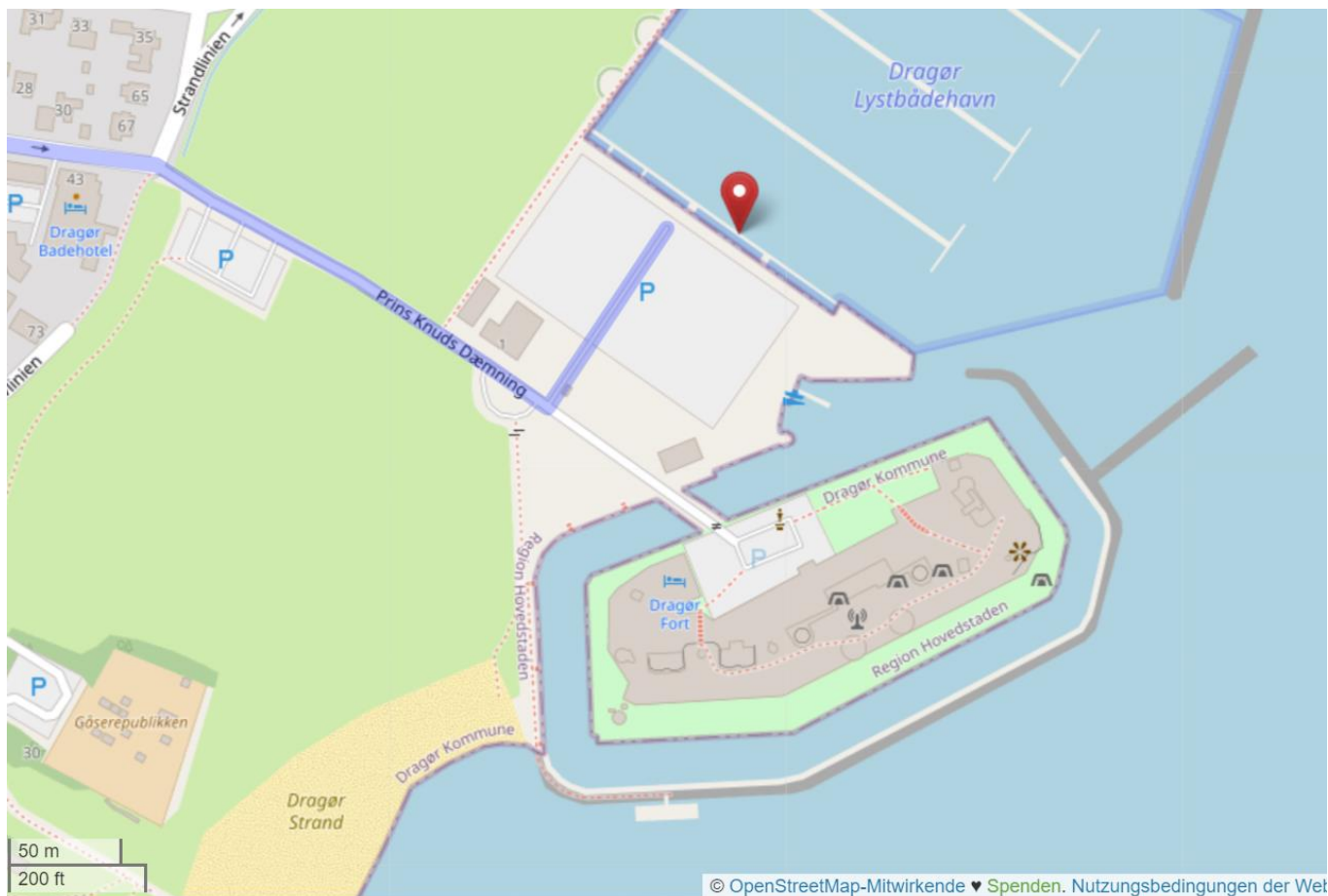
On Wednesday, 10th of August, after breakfast in the B&B near Flensburg we made our way to Copenhagen in Denmark. Here is a brief impression of the scenic route:



Arrived in Copenhagen we drove to Dragør Havn. The marina's large parking lot allowed for a relaxed arrival and after a short breather Torleif's car SM7EYW arrived together with Mog, SM7FMX and Rune SM7NGR. We handed over my station to the Swedish friends and briefly discussed some details of the connection. Mog, SM7FMX stayed with us while Torleif and Rune made their way across the Oresund Bridge to the site on the Swedish side. After a closer inspection of the site (it often looks better on maps on the internet than in reality), we decided to climb the former fort "Dragør Fort" for a better takeoff in the direction of Sweden. The remains of the bunker and military defense systems on a hill can still be seen there today. In the buildings on the "mini-peninsula" there is now a pub, party locations and a few apartments. It was particularly lucky that our Swedish friend Mog SM7FMX was actually born in Denmark and therefore spoke Danish fluently. He easily organized with a resident of the fort that we could park our car and equipment over the narrow bridge directly in front of his apartment. So, we "only" had to carry the equipment up the stairs to the former bunker.



Matthias, DK5NJ explaining the equipment with SM7EYW und SM7FMX



source: openstreetmap.org 22.08.2022



SM7FMX and DB6NT on the old Dragør Fort in [JO65IO11HF](#)



SM7EYW on the Swedish coast in [JO65KM65UR](#)



DB6NT beaming and checking the right antenna direction



View from OZ to SM



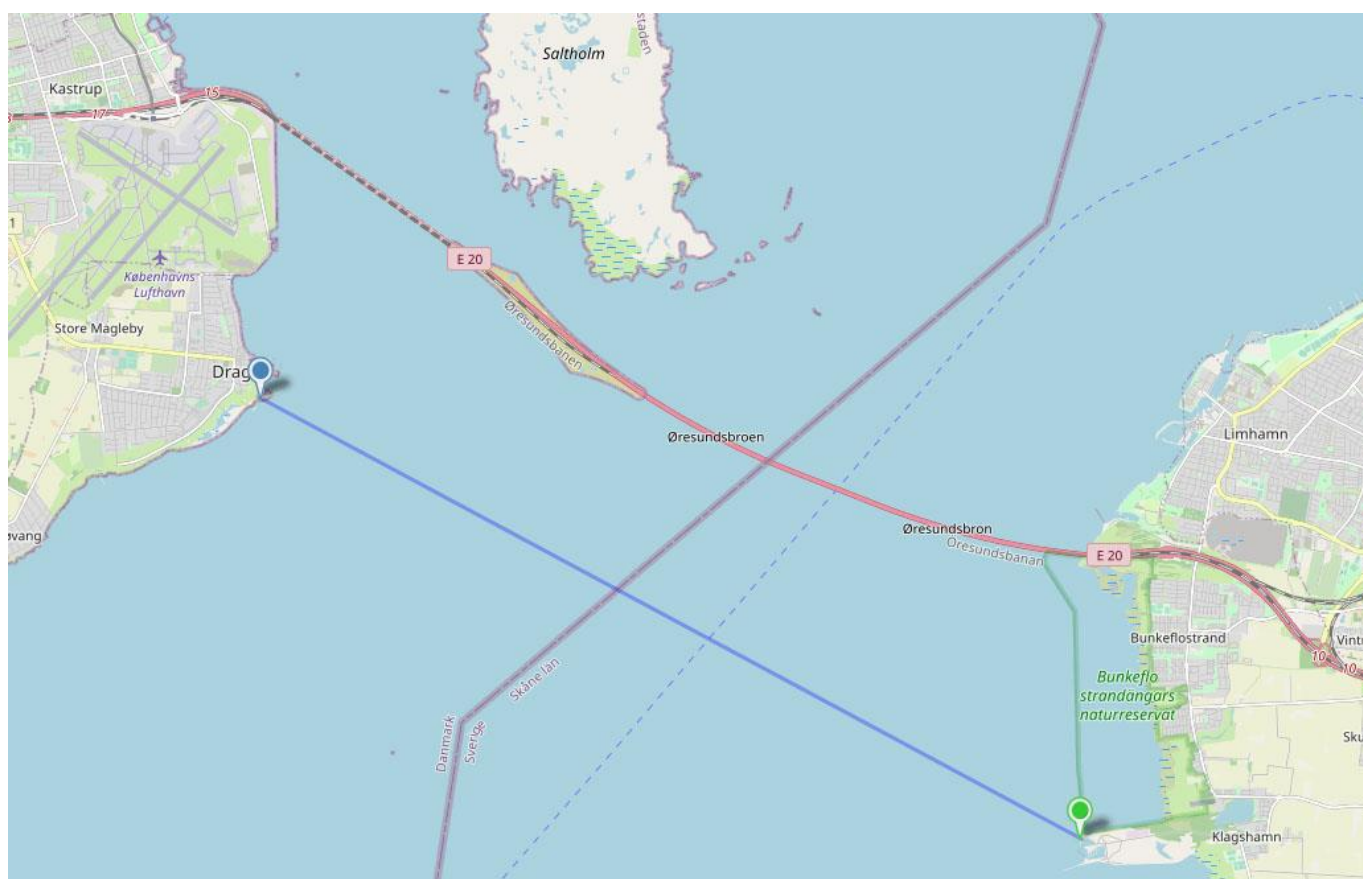
DK5NJ with the Equipment on the old Dragør Fort/ Dragør Havn

To everyone's delight, all connections then also worked from 122 GHz to laser. Here's a look at the log:

Date	BAND	UTC	Call 1	RST 1	Locator 1	Call 2	RST 2	Locator 2	First QSO	Distance
10.08.2022	122 GHz	14:15	OZ/DK5NJ	599	JO65IO11HF	SM7EYW	599	JO65KM65UR	no	15.208 km (9.45 mi)
10.08.2022	134 GHz	14:21	OZ/DK5NJ	599	JO65IO11HF	SM7EYW	599	JO65KM65UR	yes	15.208 km (9.45 mi)
10.08.2022	241 GHz	14:38	OZ/DB6NT	559	JO65IO11HF	SM7EYW	559	JO65KM65UR	yes	15.208 km (9.45 mi)
10.08.2022	660 nm	15:15	OZ/DB6NT	59	JO65IO11HF	SM7EYW	59	JO65KM65UR	yes	15.208 km (9.45 mi)

As a cross link to the organization we used 70 cm FM handheld radios. Changing from one band to the other always takes a few minutes, especially if you're not very experienced. It is therefore always useful to have a stable and direct cross connection when aligning the antennas.

After the successful QSOs across the Öresund we decided to go to Sweden via the Öresund Bridge and visit Torleif and Rune at their location in [JO65KM65UR](https://www.qrz.com/db/JO65KM65UR). They waited for us with coffee and biscuits and we talked about how to proceed for the inner-Swedish connections.



Wednesday, 10th of August, Öresund QSOs
OZ-SM 15.2 km



Coffee and cookies at the Swedish site after the Öresund QSOs (DK5NJ, SM7EYW, SM7NGR, SM7FMX)

After we had strengthened ourselves, DB6NT and I made our way to [JO65KJ59MQ](#) to make the remaining connections within Sweden. Torleif stayed with Rune at the location in [JO65KM65UR](#). Here are some impressions of our location near the Falsterbo Ridklubb Falsterboön [JO65KJ59MQ](#).



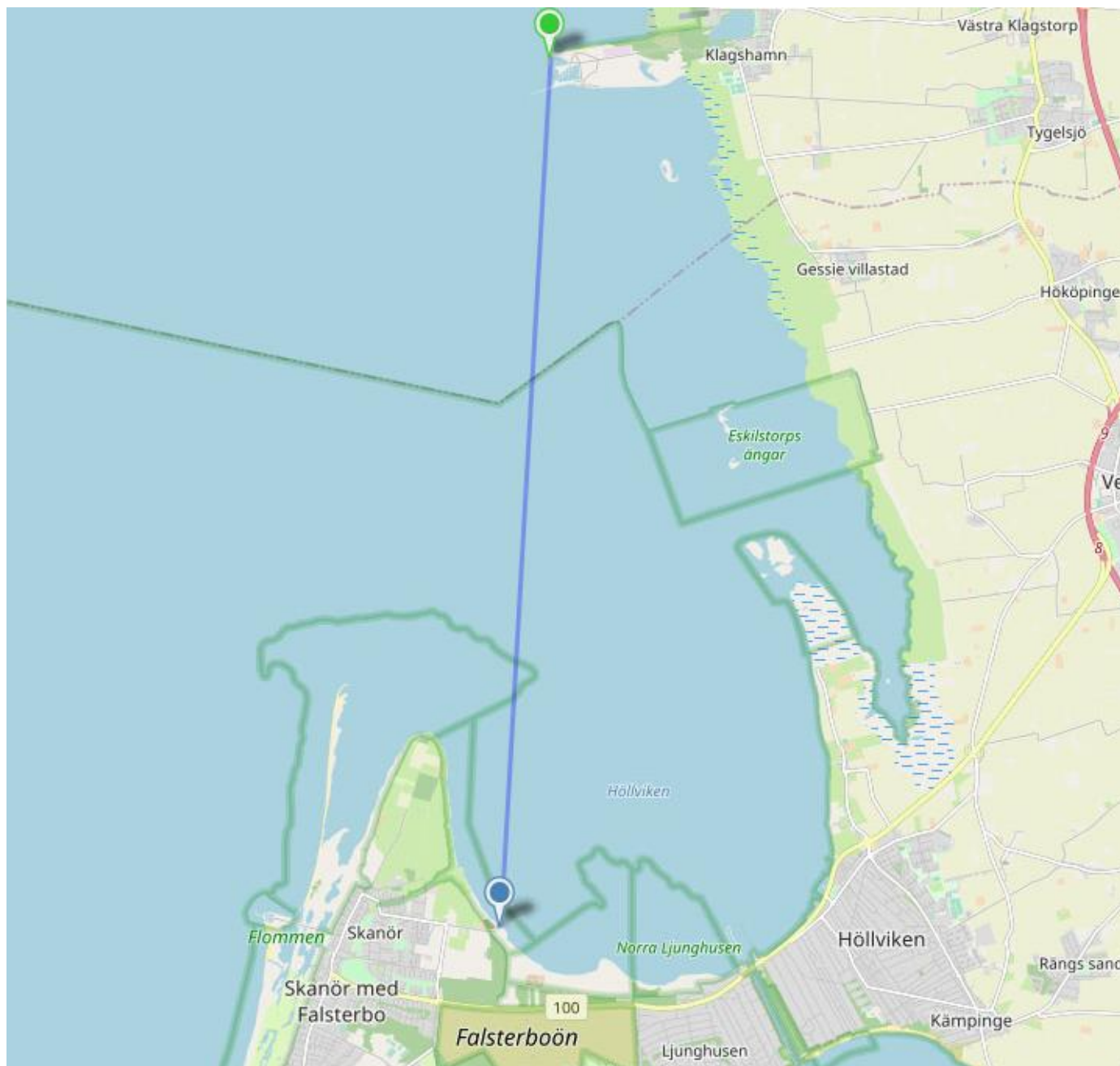
On the horizon you can see the Oresund Bridge, which connects Denmark with Sweden.



SM/DB6NT doing the laser QSO with SM7EYW

The connections within Sweden also worked well and we were able to add the following connections to the logbook:

Date	BAND	UTC	Call 1	RST 1	Locator 1	Call 2	RST 2	Locator 2	First QSO	Distance
10.08.2022	122 GHz	18:08	SM/DK5NJ	599	JO65KJ59MQ	SM7EYW	599	JO65KM65UR	no	12.099 km (7.52 mi)
10.08.2022	134 GHz	18:12	SM/DK5NJ	599	JO65KJ59MQ	SM7EYW	599	JO65KM65UR	yes	12.099 km (7.52 mi)
10.08.2022	241 GHz	18:19	SM/DB6NT	599	JO65KJ59MQ	SM7EYW	599	JO65KM65UR	yes	12.099 km (7.52 mi)
10.08.2022	660 nm	18:33	SM/DB6NT	59	JO65KJ59MQ	SM7EYW	59	JO65KM65UR	yes	12.099 km (7.52 mi)



SM-SM 12.099 km

In the evening we drove to Torleif's home. There he prepared a "Victory Dinner" for us, grilled pork fillet, which was excellent. Some experienced VHF OM's still know this happening from the legendary club station SK7MW, which unfortunately has since been dismantled due to other uses of the property. The whole thing was then washed down with a German barrel of beer 😊 We would like to take this opportunity to express our thanks once again for the hospitality and helpfulness of SM7EYW. Radio amateurs like him show again and again that our common hobby enables friendships without borders all over the world!

Even though the journey was very exhausting for Michael and me (3 days, 2 nights), we took the ferry from Trelleborg (Sweden) back to Rostock the next day. From there we started our journey home in the direction of Upper Franconia. With the luggage were many new country first connections, again a bit more experience on the experimental amateur bands from 122 - 241 GHz, great encounters with the Swedish OM's and last but not least an outstanding Swedish and Danish coastal landscape with great weather. Just wondering what's next?

73 de Matthias, DK5NJ

Some QSOs were filmed and will be published as a video on my website www.dk5nj.de