News, reports and articles

2024 -Hottest Contest Ever!

Up

Posted by OZ1FDH
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5P5T, full setup at the contest site

Since 2007 5P5T has been active in the Region 1 VHF September contest, with 2024 it makes 18 consecutive tests in a row. The equipment and team have seen changes over the years, but long-lasting friendships and a barn at OZ1FDH has enabled us to build up and develop our station setup.

Last year after successfully testing an Italab PA we decided that going forward it was time to make the full change from tube PAs to LDMOS. More than a decade of bumpy transport and use had taken its toll on the old PAs, they had started breaking down and a major refurbishment was needed. Another reason was the Russian tubes used in the PAs. Supporting Russian manufacture is not good for anybody, and we decided to get rid of every piece of Russian derived equipment for good.

Station and antennas
The setup we are using is a 3-array phased system of 8x3 element each and 4x10 element, all DK7ZB designs and all vertically stacked to secure as wide a horizontal beamwidth as possible. The phased array of 3 element yagis almost covers from 90 to 270 degrees.

All antennas are used simultaneously for TX, and for RX each antenna can be selected individually in groups, or all together. It did take some time and errors to get the phased array fully working, among other being in full counter phase, you can read more about the antenna system design and some of the troubles here.

Since 2022 the station setup is an ICOM 7610 and DN6NT 144pro transverter. Both equipment works very well, and especially the ICOM 7610 is a major step forward in terms of its overall features and cleanliness of the TX signal compared to the ICOM 7700 we used before. As RX for the 2nd operator, we use an ICOM 765 PRO II, maybe next year we will set up the opportunity to also use the ICOM 7610 as 2nd operator RX.

The power supply is from a 50 kW diesel generator, it weighs more than a ton, but it really works and gives us a smooth sinosuidal 3-phase 220V power.

Putting it all together

We arrived Friday at noon, and apart from a major scare when the engine of the old Land Rover suddenly cut out for no apparent reason 5 km away from the site, we got all the equipment and generator safely to the top of Kongsbjerg 134 mASL on the island of Moen. The QTH is perfect, with a take-off over the sea from 80 to 270 degrees. On top of that, the location is beautiful with no neighbors and very low RF noise level. Take a look at the QTH in this video.

OZ1FTU Søren, OZ1GER Birger, OZ5BD Bjørn, PA5DD Uffe and OZ1FDH Claus started setting up all the equipment and antennas. The big task is the antennas, with 28 individual antennas there is a lot of cabling, mounting and checking connections to be done. Regardless of how much we prepare and inspect the equipment before leaving, there are always minor issues that need to be fixed, a bent element or a loose connector. Taken together assembly, disassembly and transport together cause equipment wear even though the equipment is used maybe only once every year.

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On top of this has been the increasing complexity of the setup. Being way beyond the single station and a yagi setup, the individual elements that need to work together increases the likelihood of equipment errors and malfunctions exponentially. With 28 antennas the chance of an antenna or cabling malfunctioning is logically 28 times higher compared to a single antenna.

It takes about 10 hours for the team to get all equipment mounted and tested, if there are no major problems or breakdowns.

It was indeed a very warm experience this year. The temperature was closer to 30 deg. C than 20 deg. C, and during night hours it still stayed above 20 deg. C. Would this also give good conditions?

Apart from a few extra antennae tests we got everything mounted with no problems, and everything WORKED the way it was supposed an hour before contest start :)

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However, another major part of the contest is the Friday night drinks, dinner and wine. Enjoying good company with a fantastic view of the Baltic sea is sets you in the right mode for a weekend out of the extraordinary.

The American! AG6QV Frank arrived Saturday morning with extra energy and an extra pair of hands. Frank who is also OZ1GPI moved to the US more than 20 years ago, but he keeps coming back joining the old team of friends.

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8x3 el ready to go up in the air

On air

As always it was PA5DD, Uffe at the mike for the first few hours. He has the experience, energy and drive that is needed for a high QSO rate. The contest got off to a fairly good start 84 QSOs the first hour and above 1 QSO/min for the first 4 hours.

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We worked a few more UK stations than normally, there was a slight tropo lift above the North Sea. The activity was good and it was nice to see a full band of SSB and CW stations. Maybe it was just a coincidence and the fact that we are far away from the main centers of activity, but the overall impression was also that the quality of the TX signals has improved over the years, and there where no heavy splatters.

ODX was 9A0BB in JN85 at 1105 km, it was hard work in CW but we made it.

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Sunday morning and until the end of the contest, the conditions looking south were really poor. Signals where weak and many QSOs where hard work. TM3A from JN36 where really strong for 10-15 min, but that was about it. It probably coincided with heavy rains and turbulent weather in many parts of Europe.

The Swedish quarterly contest took place Sunday morning, and we got a handful of nice contacts to the north with OH6KTL in KP02 as a nice surprise.

Sunday morning we where also in for a treat: American pancakes with blueberries prepared by AG6QV. It is the small things that gives you that little extra energy.

For some unknown reason the internet modem and the computer used for ON4KST did not get on well together and we had to continuously connect to the chat, but it was no major issue.

image (1)

The final result was 690 QSOs and 335000 points in 102 locators and 19 DXCCs, which is an OK result with average conditions. We had hoped for 700+ QSOs but we probably worked everything possible, and there where no equipment failures! The previous years we had been haunted by mysterious antenna relay problems and blown PAs. Not this year!

Taking it all apart and packing the trailer takes about 4 hours. Some of us has a few hours drive back home while other are on the road for more than 12 hours. You are dog tired once you get home, but it is always a very fulfilling experience.

Average conditions -climate change sucks!
It was extremely warm for a September weekend but despite the extreme warm weather the conditions where average. A turbulent atmosphere is not good for tropospheric propagation. Yet, another example that climate change sucks!

But what about our own portable contest operation? How much do we contribute to the CO2 emissions? Based on the fuel consumption for the generator assuming 2,7 kg of CO2/liter of fuel, the CO2 emission/QSO was 170 grams, and if we include all the transport of the operators and equipment, the emissions rise to 960 grams/QSO! A QSO from my home QTH is way below 1 gram of CO2/QSO. For portable operations it is hard to do without the diesel generator, but reducing the emissions related to transport should be possible.

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Post contest -avoiding the catastrophe!
The deadline for submission of logs has been changing over the past years. In rules it is stated since 2023 that the log must be uploaded no later than the first Wednesday after the contest. However, in 2023 the deadline was still set on the 2nd Monday at the contest robot. OZ1FDH who normally is doing the post contest log work did not check this properly and thought it was still the 2nd Monday which was the deadline. Not so! Luckily PA5DD noted late in the afternoon on Wednesday that indeed the deadline was just a few hours away, and we managed to upload the log. Hopefully, not too many will be caught by this mistake.

Looking ahead
Apart from minor equipment fixes and maintenance we do not expect major changes to the equipment. The 4x10 el yagis needs major refurbishment, but that is simply due to wear and tear. The Italab LDMOS PAs worked flawlessly and where really a major step forward in terms of performance and ease of use.

Conditions and weather may be what they are, the September contest is unique and it is really good to see that SSB and CW still rocks and will continue to do so!

Thanks for the QSOs and see you next year!

Top 20 QSO-points region 1 2024, 20240907

1	9A0BB	JN85EI	1105
2	TM3A	JN36BP	1030
3	M0UGA/P	IO91GI	1015
4	M0ICK/P	IO93AD	967
5	G8VXJ/P	IO93AD	967
6	OH6KTL	KP02OJ	964
7	S59P	JN86AO	963
8	GM4ZUK/P	IO86RW	962
9	S54W	JN86DT	946
10	HA6W	KN08FB	943
11	HA2R	JN87UE	938
12	HG6Z	JN97WV	937
13	GM4V	IO85VW	935
14	HA7NK	JN97WW	933
15	G4HGT/P	IO94CB	930
16	HB9GF	JN47BC	929
17	GM1T	IO97CK	926
18	G4KUX	IO94BP	923
19	TM5R	JN19BQ	919
20	HA1KYY	JN87FI	891

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