

20th International EME conference Trenton 2024

# Final setup and operation of 8m offset dish



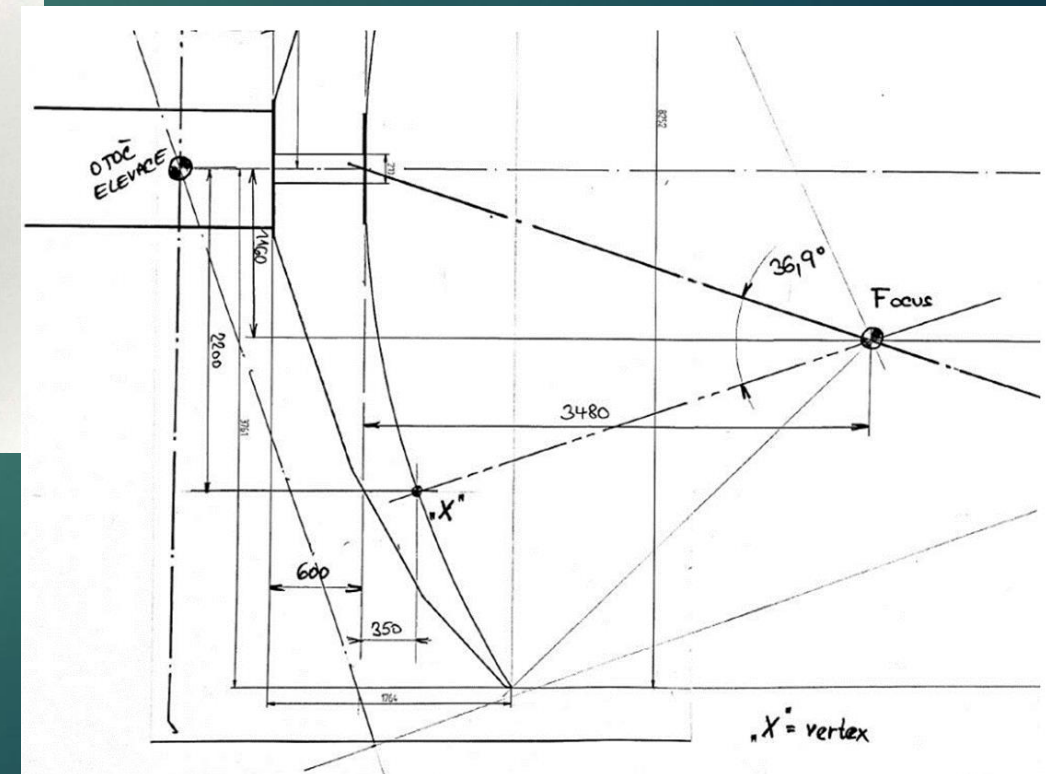
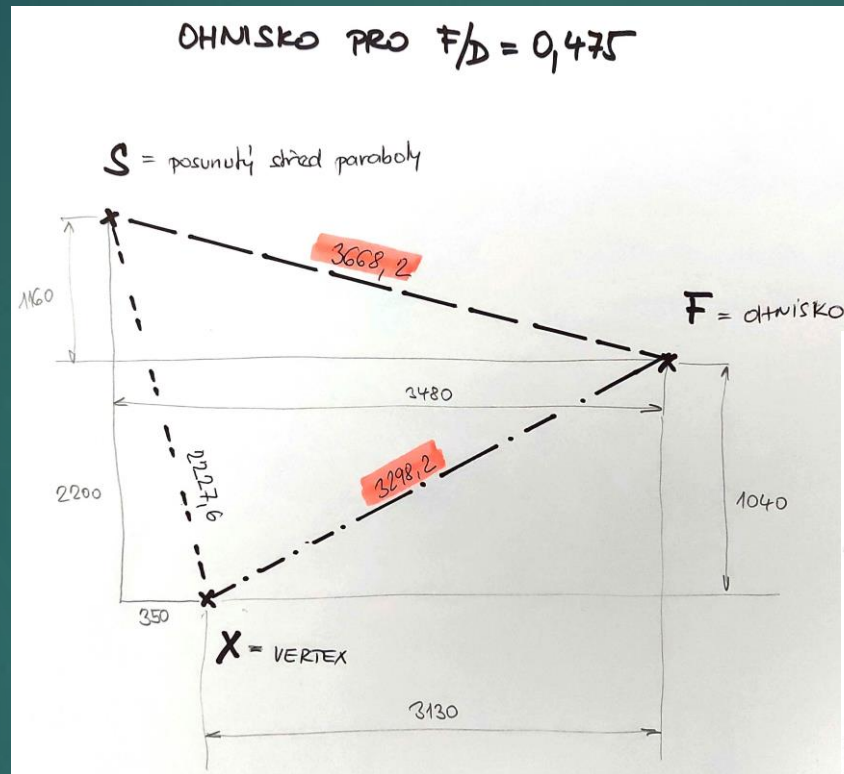
# Setup procedure:

- Status of the dish after completion 10/2021
- Calculation of the exact position of the dish focus
- Production of setting jig
- Production of anchoring elements of the jig fixture
- Adjusting the feed holder to the focal point
- Feed axis offset angle setting
- Measuring the Sun's noise
- Measuring Moon Noise
- CW, SSB and Q65 echo test
- EME connections realized after feedhorn adjustment
- Production of feedhorn for 432 MHz
- Test of the dish for 432 MHz band

# Antenna and focus adjustment

03/2022

- Calculation of the exact position of the parabola focus



# Antenna and focus adjustment

03/2022

- Production of setting jig
- Production of anchoring elements of the fixture
- Adjusting the feed holder to the focal point



# Antenna and focus adjustment

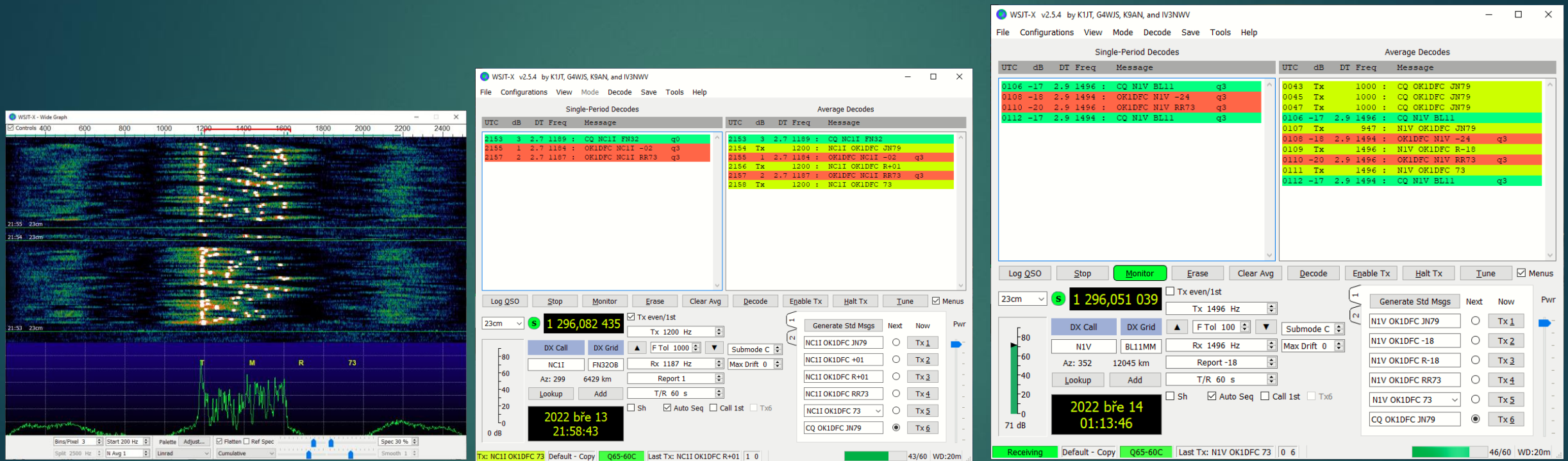
## 03/2022

- Feed axis offset angle adjustment  $36.9^\circ$
- Measuring the Sun's noise
- **22.5dB - 123 SFU**
- Measuring Moon Noise
- **1,1dB – clear sky**



# After dish and focus adjustment 03/2022

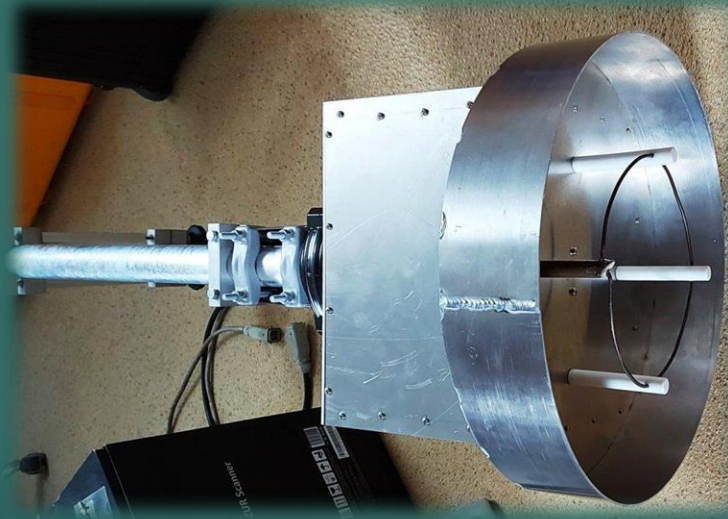
- Self-echo test CW - 599, SSB - 57 and Q65 +02 DB, - 10W easily detectable CW signal
- EME QSO realized with **NC11** and **N1V**



- CW smallest station 180cm offset and 50W RF 539
- Q65 3m dish and **3W** RF !!! -18DB - **PAOTBR**

# Dish and focus adjustment 03/2022

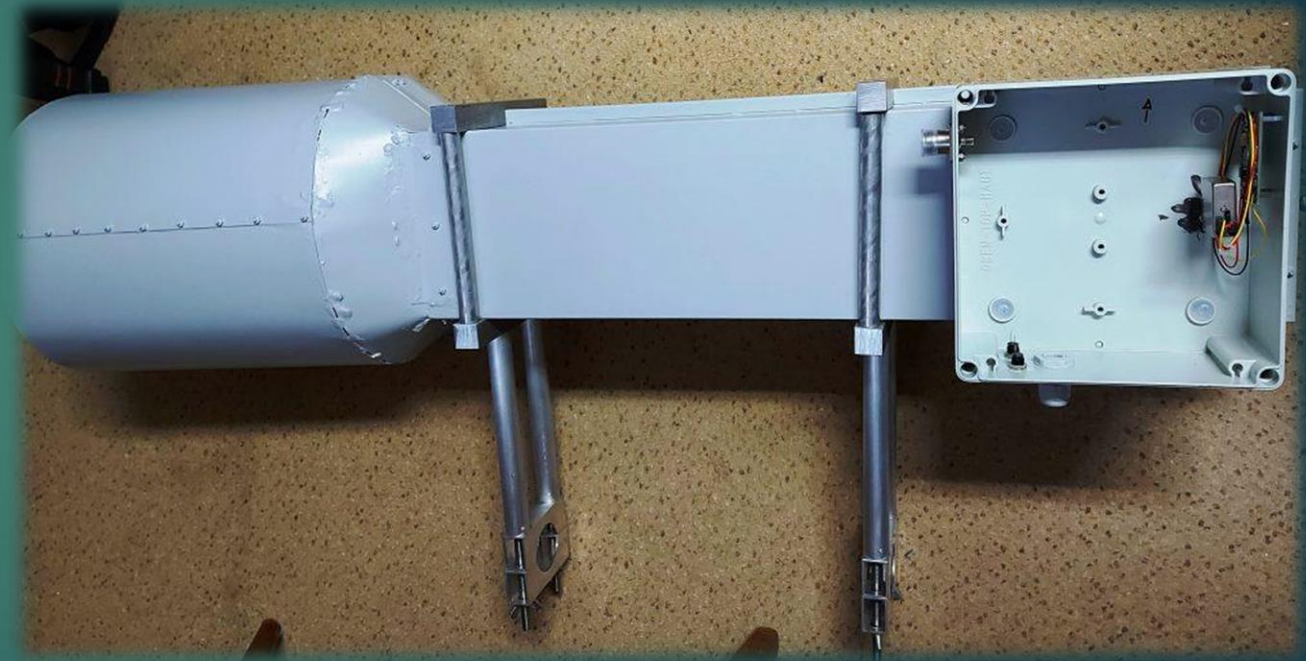
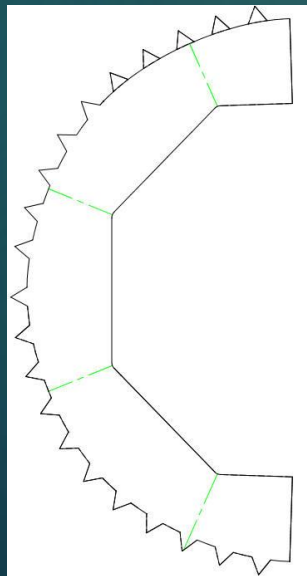
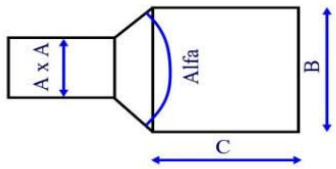
- Production of the 432 MHz feedhorn - Loop feed



# Feeds

- Construction of 1296 MHz feed - septum OK1DFC
- Funnel W2IMU
- F/D = **0.457**
- 1296 and 2320 MHz

	MHz	$\lambda$ m	$\lambda$ cm
input	1296	0,231481	23,14815
input	F/D	0,457	
Dimension "B"	0,2486 m	248,6 mm	
Feed half angle:	41,52894 $\alpha/2^\circ$	83,05787 $\alpha^\circ$	
Dimension "C"	0,294388 m	294,4 mm	
Dimension "A x A"	0,143 m	143 mm	
TE11	0,424111		
TM11	0,203852		





# Dish and focus adjustment 03/2022

- 432 MHz dish test
- Smallest station 10el. Single Yagi and 100W -27 DB
- Sun **20dB** at SFU 123, up to 18° angle of elevation

WSJT-X v2.5.4 by K1JT, G4WJS, K9AN, and IV3NWX

File Configurations View Mode Decode Save Tools Help

Single-Period Decodes

UTC	dB	DT	Freq	Message	
1114	-13	2.9	1501	: CQ HS0ZOP OK03	q3
1116	-13	2.9	1499	: OK1DFC HS0ZOP -20	q3
1124	-13	2.7	1055	: CQ HS0ZOP OK03	q3
1126	-15	2.6	1055	: OK1DFC HS0ZOP -21	q3
1128	-16	2.7	1055	: OK1DFC HS0ZOP RRR	q3
1131	-23	2.6	1080	: HS0ZOP PA2V JO22	q0

Average Decodes

UTC	dB	DT	Freq	Message	
1114	-13	2.9	1501	: CQ HS0ZOP OK03	q3
1114	-13	2.9	1501	: CQ HS0ZOP OK03	
1115	Tx		2184	: HS0ZOP OK1DFC JN79	
1116	-13	2.9	1499	: OK1DFC HS0ZOP -20	q3
1117	Tx		1501	: HS0ZOP OK1DFC R-13	
1119	Tx		1501	: HS0ZOP OK1DFC R-13	
1121	Tx		1501	: HS0ZOP OK1DFC R-13	
1123	Tx		1501	: HS0ZOP OK1DFC R-13	
1124	-13	2.7	1055	: CQ HS0ZOP OK03	q3
1124	-13	2.7	1055	: CQ HS0ZOP OK03	
1125	Tx		1501	: HS0ZOP OK1DFC JN79	
1126	-15	2.6	1055	: OK1DFC HS0ZOP -21	q3
1127	Tx		1055	: HS0ZOP OK1DFC R-15	
1128	-16	2.7	1055	: OK1DFC HS0ZOP RRR	q3
1129	Tx		1055	: HS0ZOP OK1DFC 73	
1129	Tx		1055	: HS0ZOP OK1DFC 73	

Log QSO Stop Monitor Erase Clear Avg Decode Enable Tx Halt Tx Tune  Menus

70cm S 432,080 635  Tx even/1st

DX Call: HS0ZOP DX Grid: OK03GR Tx 1055 Hz F Tol 100 Submode B

Az: 84 8568 km Rx 1055 Hz Max Drift 0

Lookup Add Report -15 T/R 60 s

2022 dub 10  
11:31:59  Sh  Auto Seq  Call 1st  Tx6

Generate Std Msgs Next Now Pwr

HS0ZOP OK1DFC JN79	<input type="radio"/>	Tx 1
HS0ZOP OK1DFC -15	<input type="radio"/>	Tx 2
HS0ZOP OK1DFC R-15	<input type="radio"/>	Tx 3
HS0ZOP OK1DFC RRR73	<input type="radio"/>	Tx 4
HS0ZOP OK1DFC 73	<input type="radio"/>	Tx 5
CQ OK1DFC JN79	<input checked="" type="radio"/>	Tx 6

Receiving Default - Copy Q65-60B Last Tx: HS0ZOP OK1DFC 73 1 0 59/60 WD:20m

# Conclusion

Thank you for your attention -  
Questions ?????