



Proppy

**...eine kleine Einführung
in ein vielseitiges Programm
zur Ausbreitungsvorhersage**

von Tom DF5JL

© 2022



[https://soundbytes.asia/
proppy/area](https://soundbytes.asia/proppy/area)

Recommendation ITU-R P.533-14
 (08/2019)

**Method for the prediction of the
 performance of HF circuits**

P Series
Radiowave propagation



<https://www.itu.int/rec/R-REC-P.533-14-201908-I/en>

L_4 : factor to allow for auroral and other signal losses, given in Table 2. Each value is evaluated in terms of the geomagnetic latitude G_m (N or S of equator) and local time t for an Earth-centred dipole with pole at 78.5° N, 68.2° W: mean values for the control points of Table 1 d) are taken.

In the Northern Hemisphere, winter is taken as December-February, equinox as March-May and September-November and summer as June-August. In the Southern Hemisphere, the months for winter and summer are interchanged.

For $G_m < 42.5^\circ$, $L_4 = 0$ dB

L_5 : terms containing those effects in sky-wave propagation not otherwise included in this method. The present recommended value is 8.72 dB given in § 5.2.

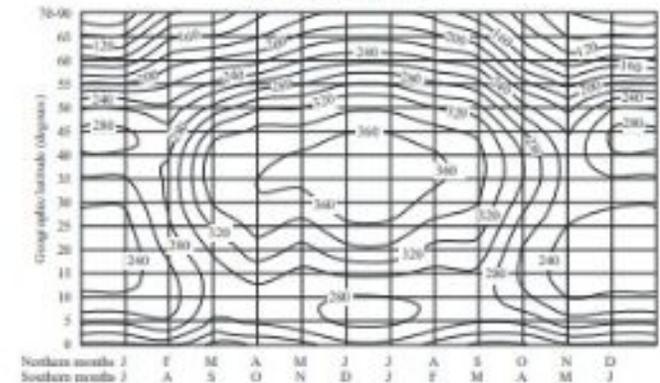
NOTE 1 – It should be noted that the value of L_5 is dependent on the elements of the prediction method, so that any changes in those elements should be accompanied by revision of the L_5 value. The value of L_5 is the excess loss determined from the difference between the predicted field strength (for path lengths less than 7 000 km) and the D1 database.

Discounting modes screened by the E layer, the overall resultant equivalent median sky-wave field strength, E_s , is taken as the root-sum-squared field strength for N modes where N is chosen to encompass the F2 and E modes for which predictions have been made, i.e.:

$$E_s = 10 \log_{10} \sum_{n=1}^N 10^{E_n/10} \quad \text{dB} (1 \mu\text{V/m}) \quad (28)$$

For the prediction of the performance of digitally modulated systems, the equivalent median sky-wave field strength for each mode is taken into account, see § 10.2.

FIGURE 1
 The absorption factor, $A_{F_{min}}$



08002-01

Was kann Proppy?

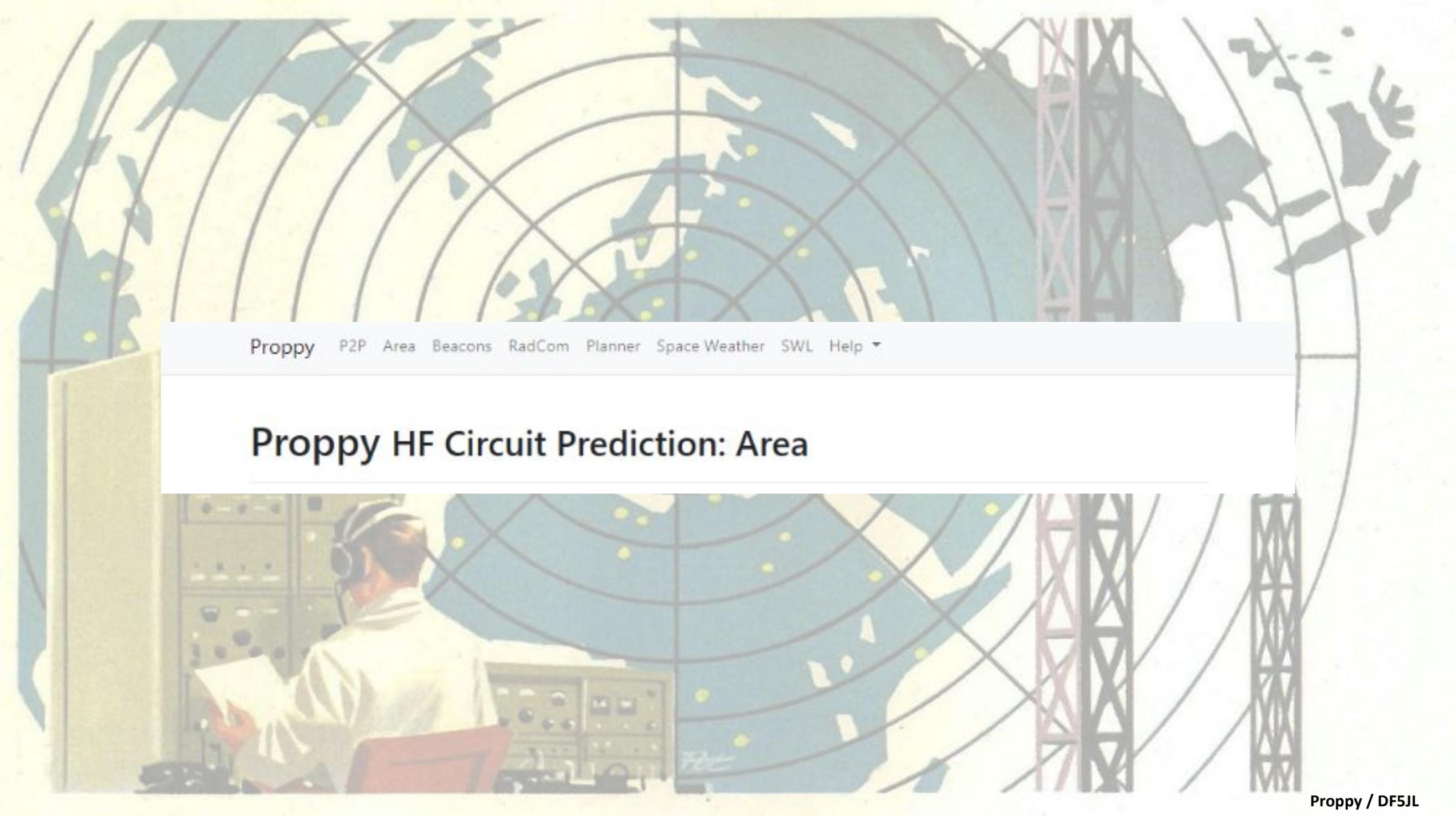
Vorhersage von Frequenzen, Signalpegel und entsprechende Zuverlässigkeiten von HF-Verbindungen (HF) für benutzerdefinierte Pfade und Zeiten

Es werden drei Vorhersagemodi unterstützt:

Area/Bereich: Vorhersage der geografischen Abdeckung für einen bestimmten Standort zu einem bestimmten Zeitpunkt und mit einer bestimmten Frequenz

Point-to-Point/Punkt-zu-Punkt: Prognostiziert die Verbindungsqualität für einen bestimmten Pfad über einen Zeitraum von 24 Stunden in einem bestimmten Monat.

Planer: Dient zur Erstellung von Ausbreitungsdiagrammen, die den bekannten Diagrammen in Magazinen ähneln; bis zu 12 Punkt-zu-Punkt-Vorhersagen werden auf einem einzigen Blatt dargestellt, das ausgedruckt werden kann.



Proppy P2P Area Beacons RadCom Planner Space Weather SWL Help ▾

Proppy HF Circuit Prediction: Area



Colour Portland
BCR SNR PR
Day / Night
Download
⏪ ▶ ⏩
Run Prediction

Plot

Resolution Low
Source Text

System

Date / Time

Tx. Site

Latitude

 Longitude

Tx. Site

Latitude

Longitude

Antenna

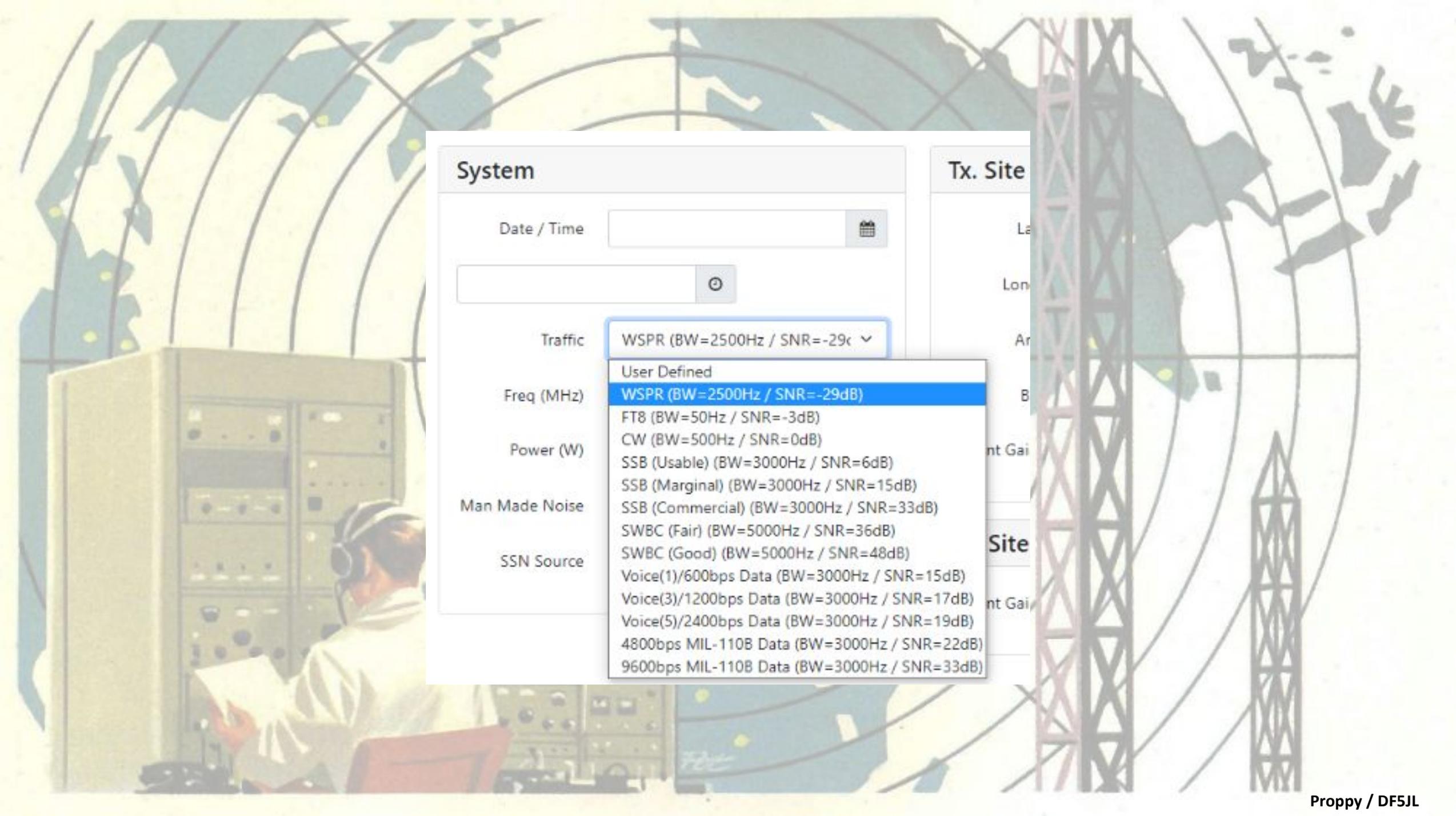
Bearing

Ant Gain (dBi)

- Isotropic
- 5m Whip, Tilted/NVIS (2-30MHz)
- Cushcraft R5 (10-20m)
- Fan Dipole (2-30MHz)
- HR 4/4/.5 (12MHz)
- Hex Beam (14.1MHz)

Rx. Site

Ant Gain (dBi)



System		Tx. Site
Date / Time	<input type="text"/>	La
	<input type="text"/>	Lon
Traffic	WSPR (BW=2500Hz / SNR=-29c	Ar
Freq (MHz)		B
Power (W)		nt Gai
Man Made Noise		Site
SSN Source		nt Gai

User Defined

WSPR (BW=2500Hz / SNR=-29dB)

FT8 (BW=50Hz / SNR=-3dB)

CW (BW=500Hz / SNR=0dB)

SSB (Usable) (BW=3000Hz / SNR=6dB)

SSB (Marginal) (BW=3000Hz / SNR=15dB)

SSB (Commercial) (BW=3000Hz / SNR=33dB)

SWBC (Fair) (BW=5000Hz / SNR=36dB)

SWBC (Good) (BW=5000Hz / SNR=48dB)

Voice(1)/600bps Data (BW=3000Hz / SNR=15dB)

Voice(3)/1200bps Data (BW=3000Hz / SNR=17dB)

Voice(5)/2400bps Data (BW=3000Hz / SNR=19dB)

4800bps MIL-110B Data (BW=3000Hz / SNR=22dB)

9600bps MIL-110B Data (BW=3000Hz / SNR=33dB)

System

Date / Time 



Traffic 

Bandwidth (Hz)

SNR (dB)

Freq (MHz)

Power (W)

Man Made Noise 

SSN Source 

System

Date / Time 05/16/2022 8:00 PM 

05/16/2022 8:00 PM 

Traffic CW (BW=500Hz / SNR=0dB) 

Freq (MHz) 10.1

Power (W) 5.0

Man Made Noise Rural 

SSN Source Standard Curve: 

Tx. Site

Latitude 50,62

Longitude 6,86

Antenna Cushcraft R5 (1C) 

Bearing 0

Ant Gain (dBi) 2,16

Rx. Site

Ant Gain (dBi) 2,16

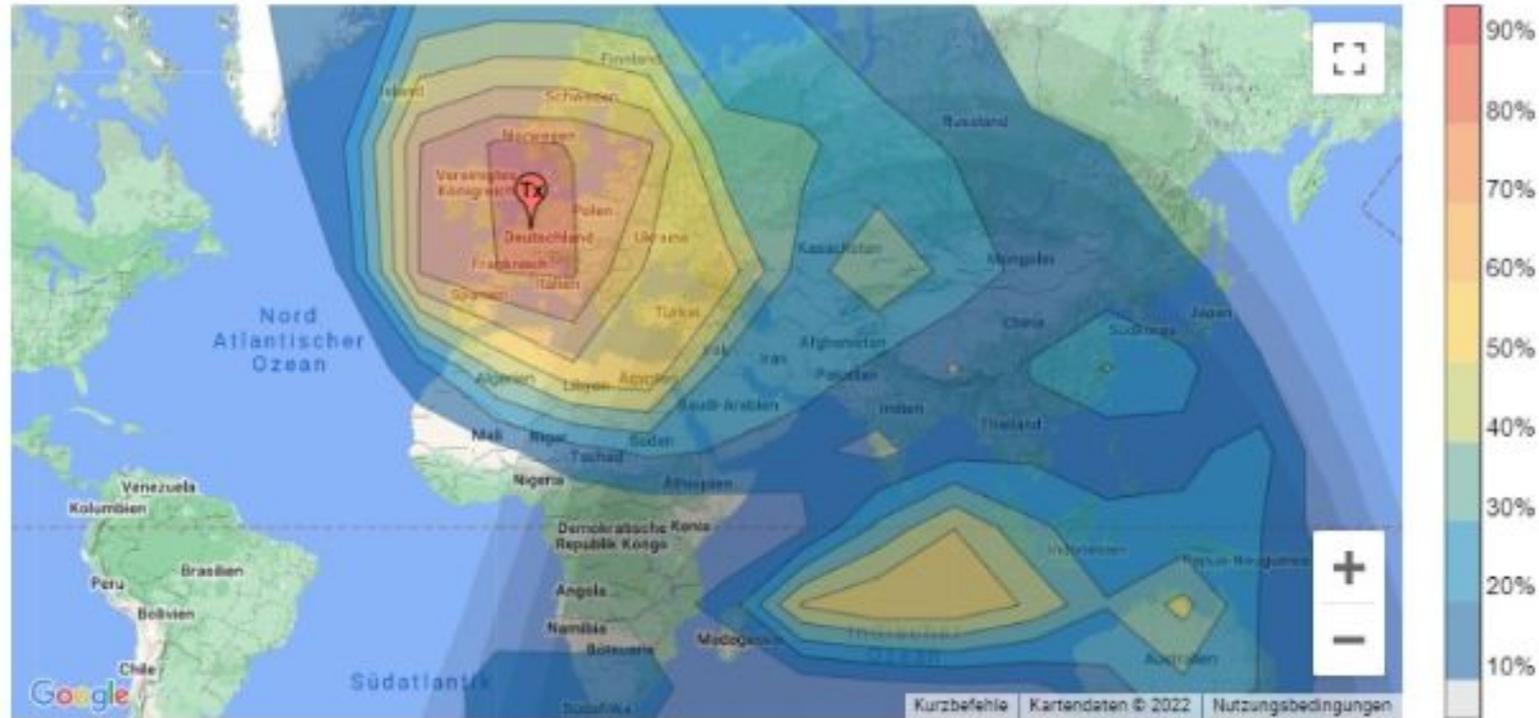
Proppy HF Circuit Prediction: Area



Colour Portland

Plot

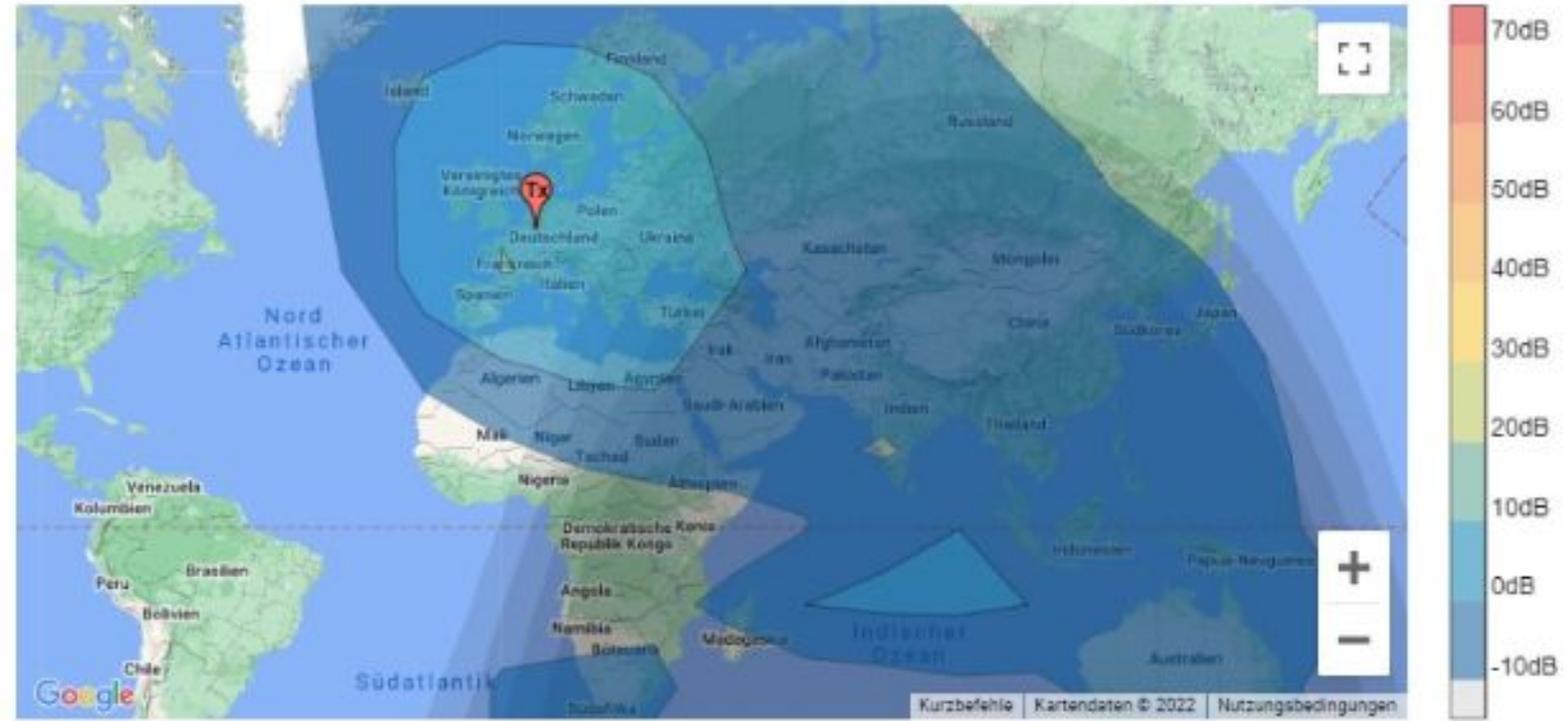
Proppy HF Circuit Prediction: Area



Colour: Portland ▾ BCR SNR PR Day / Night Download ⬇️ ⏪ ⏩ Run Prediction ↻

Plot

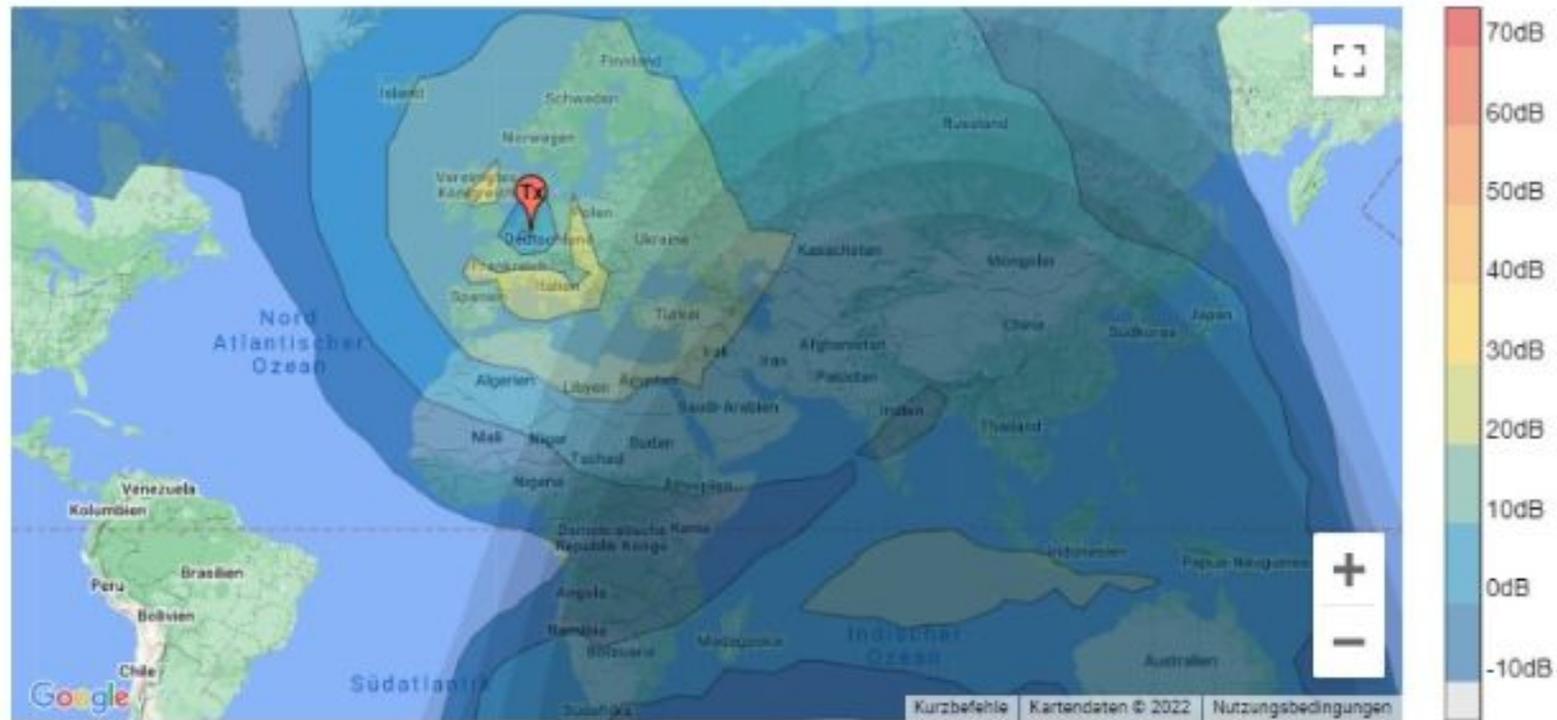
Proppy HF Circuit Prediction: Area



Colour: Portland ▾ BCR SNR PR Day / Night Download 📄 ⏪ ⏩ Run Prediction ↻

Plot

Propy HF Circuit Prediction: Area



Colour: Portland ▾ BCR SNR PR Day / Night Download 📄 ⏪ ⏩ Run Prediction ↻

Plot

Proppy HF Circuit Prediction: Area



Colour: Portland BCR SNR PR Day / Night Download ⏮ ▶ ⏭ Run Prediction

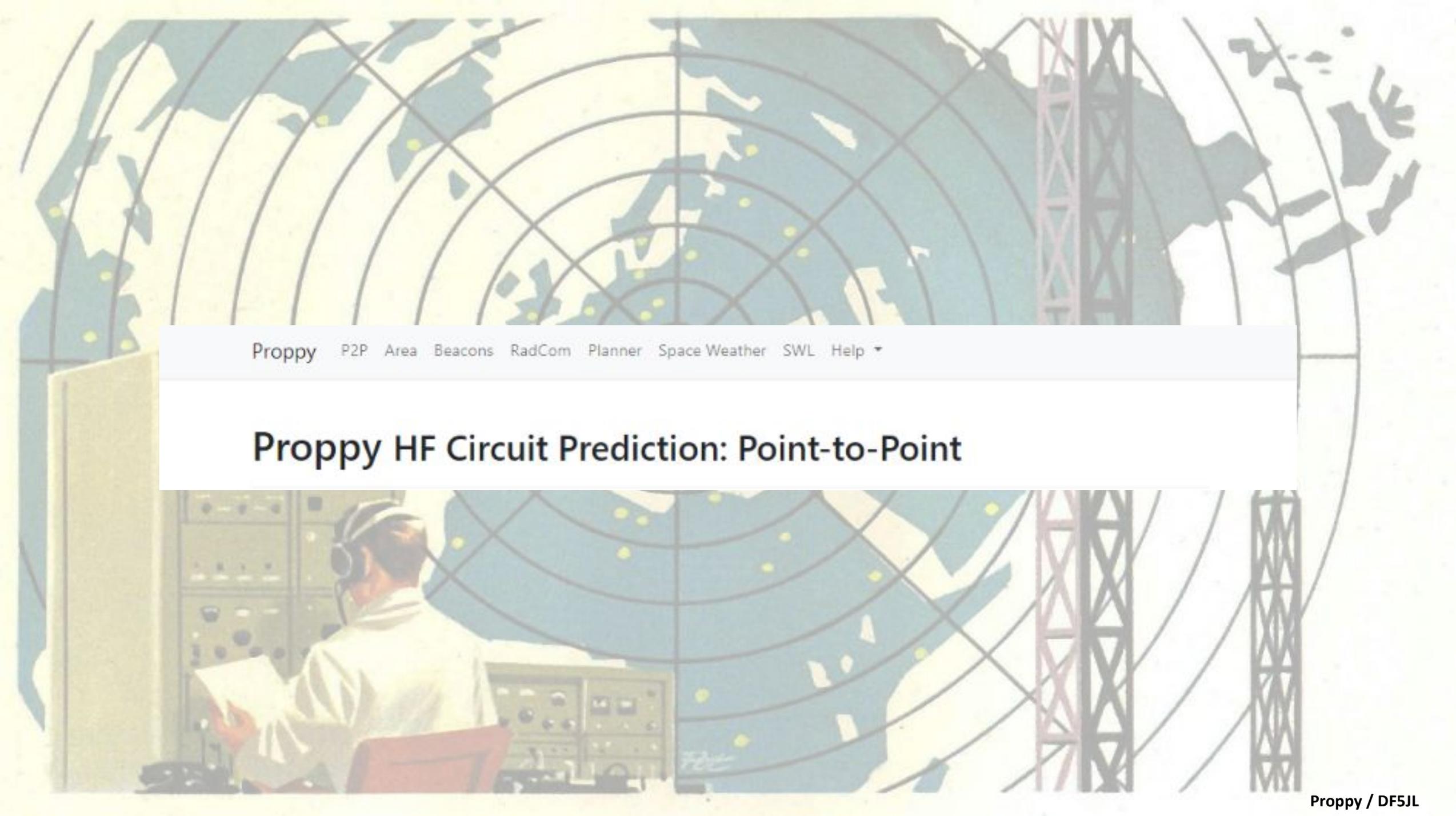
Plot

Proppy HF Circuit Prediction: Area



Colour: Portland ▾ BCR SNR PR Day / Night Download 📄 ⏪ ⏩ Run Prediction ↻

Plot



Proppy P2P Area Beacons RadCom Planner Space Weather SWL Help ▾

Proppy HF Circuit Prediction: Point-to-Point

Proppy HF Circuit Prediction: Point-to-Point



Run Prediction ↻

Plot

Source Text

OFF

Plot

Source Text

OFF

System

Date

Traffic

SSN Source

- 3 El. Yagi @10m
- 3 El. Yagi @15m
- 3 El. Yagi @20m
- 3 El. Yagi @25m
- 3 El. Yagi @30m
- 3 El. Yagi @40m
- 3 El. Yagi @60m
- 5 El. Yagi @10m
- 5 El. Yagi @15m
- 5 El. Yagi @25m
- 5 El. Yagi @30m
- 5 El. Yagi @40m
- 5 El. Yagi @60m
- 8 El. Yagi @10m
- 8 El. Yagi @15m
- 8 El. Yagi @25m
- 8 El. Yagi @30m
- 8 El. Yagi @40m
- 8 El. Yagi @60m
- Cushcraft R5 @8m

Tx. Site

Latitude

Longitude

Antenna

Rx. Site

Latitude

Longitude

Antenna

Ant Gain (dBi)

Power (W)

Man Made Noise

Path

100.0

Residential

Short Path

40,6473

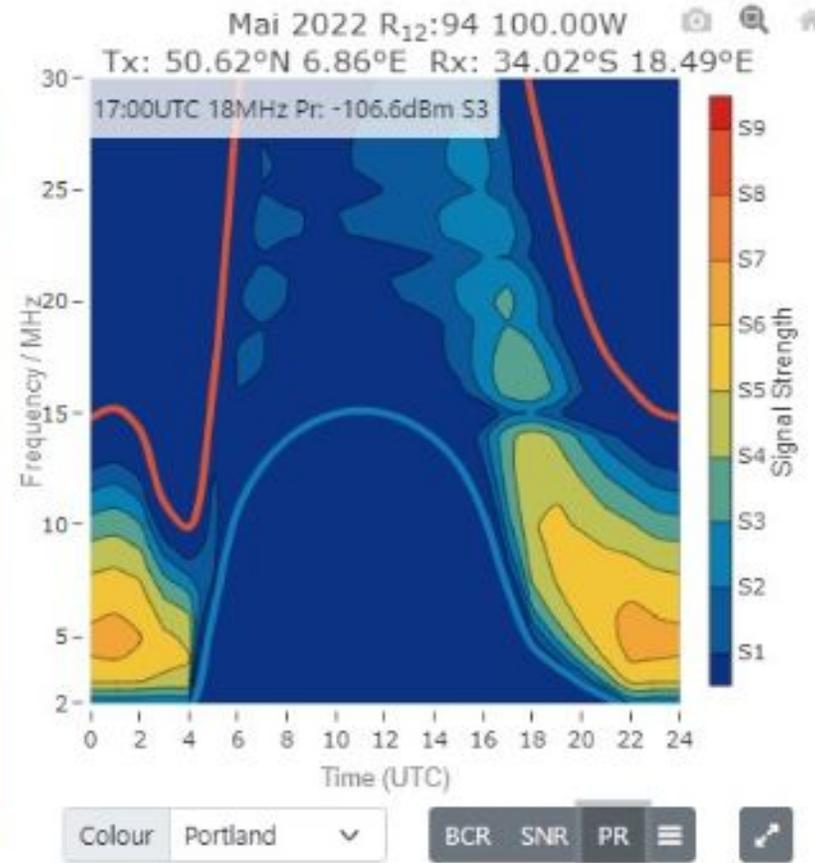
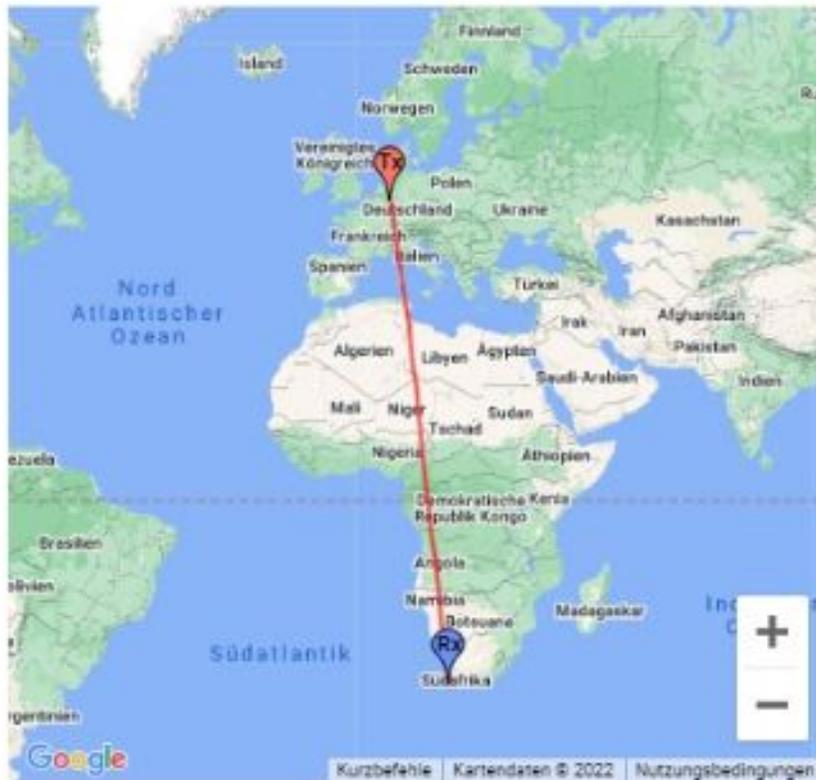
-73,9746

Isotropic

2,16

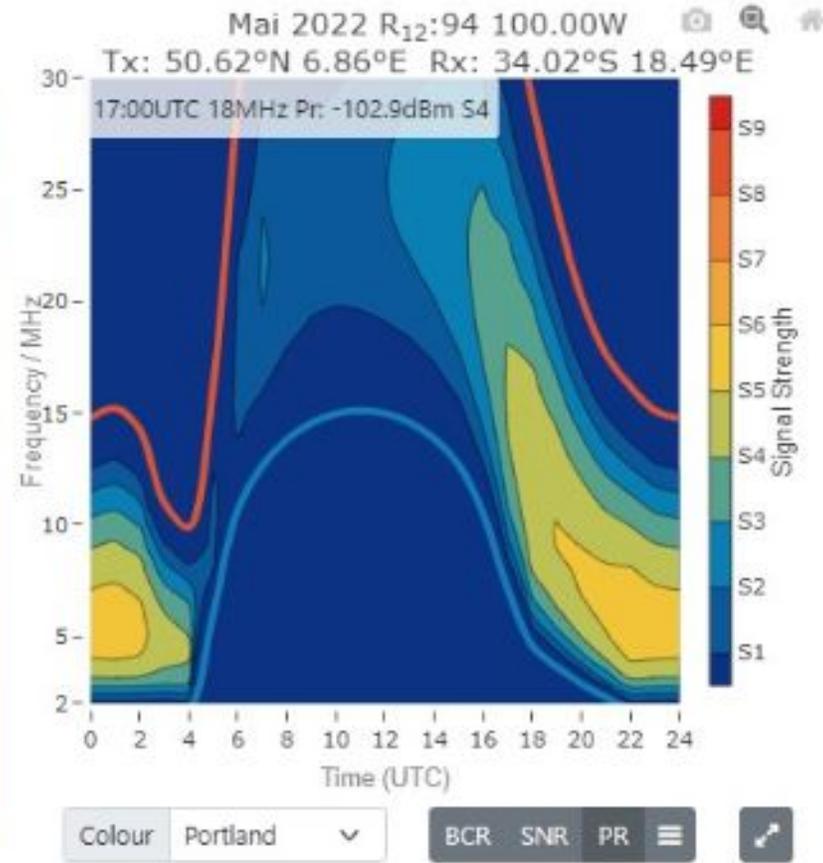
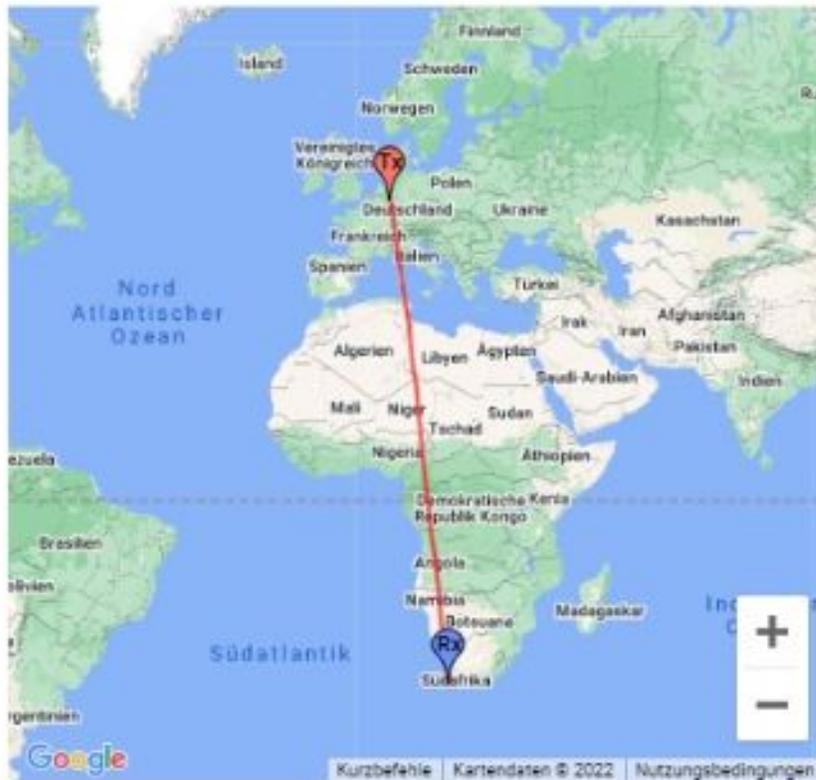
Proppy HF Circuit Prediction: Point-to-Point

Ant.: Cushcraft R5 @ 8 m Höhe



Proppy HF Circuit Prediction: Point-to-Point

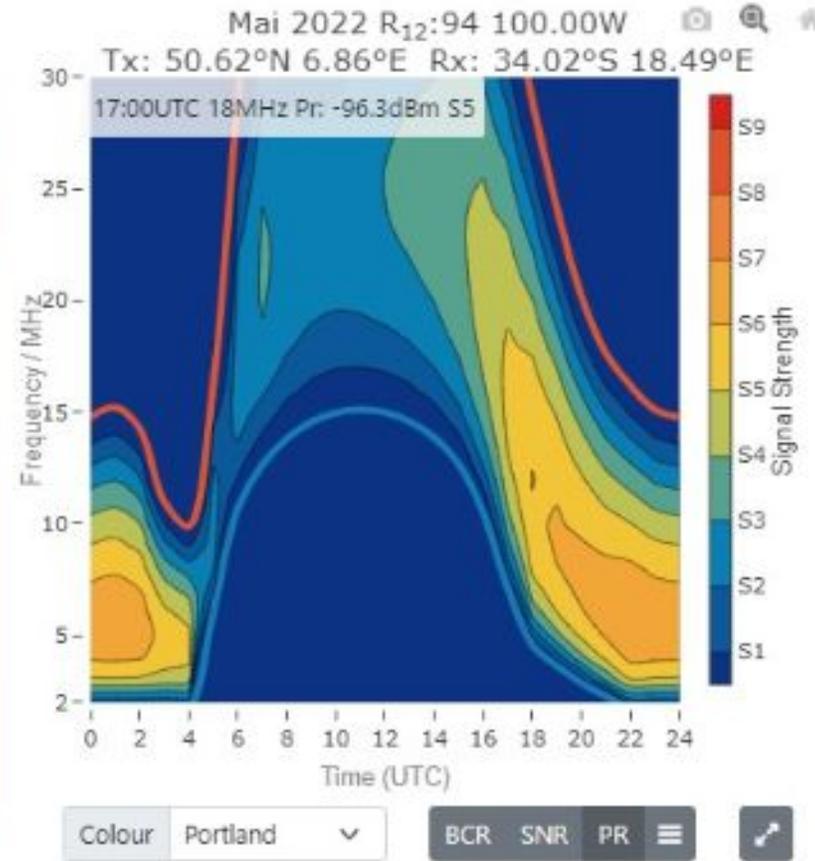
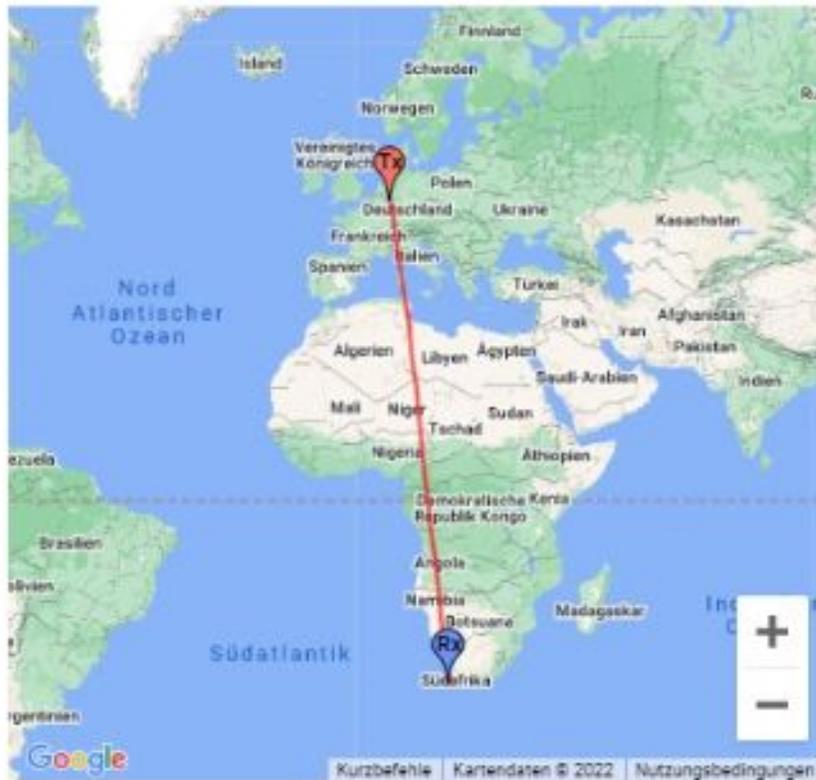
Ant.: Dipol @ 10 m Höhe



Run Prediction

Propy HF Circuit Prediction: Point-to-Point

Ant.: 3-El.-Yagi @ 15 m Höhe



Run Prediction

Ant.: 3-El.-Yagi @ 15 m Höhe

Laut einer Meldung von Manuel Méndez (Lugo, Spanien) in der "World of Radio"-Liste wird LRA 36 / Radio Nacional Arcángel San Gabriel am morgigen Mittwoch um 1500 UTC auf Sendung gehen und das Programm vom letzten Samstag wiederholen - auf 15476 kHz in USB (oberes Seitenband)!



LRA 36 RADIO NACIONAL "ARCANGEL SAN GABRIEL" 2015



Base Antártica Esperanza
Territorio Antártico Argentino
Republica Argentina

AM 15.476 khz
WWW.RADIONACIONAL.COM.AR



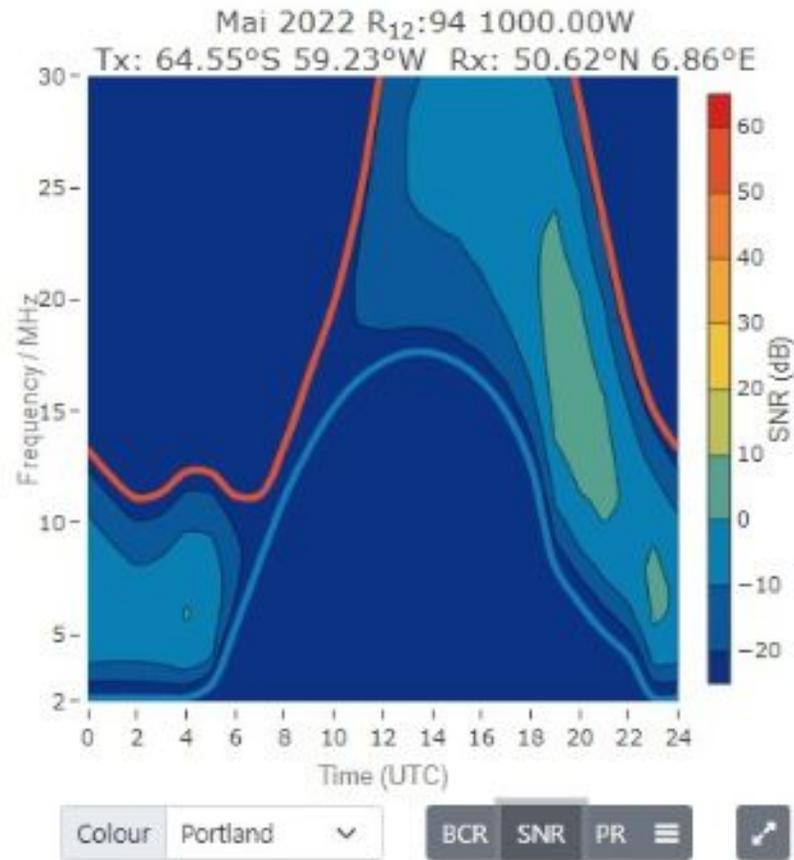
Ubicación Geográfica
Latitud 63° 23' 51" Sur
Longitud 56° 59' 44" Oeste

Contactos:
Tel: 0810-222-0770 Int: 216/316
Correo Electrónico: lra36@hotmail.com

 Esperanza San Gabriel

Propy HF Circuit Prediction: Point-to-Point

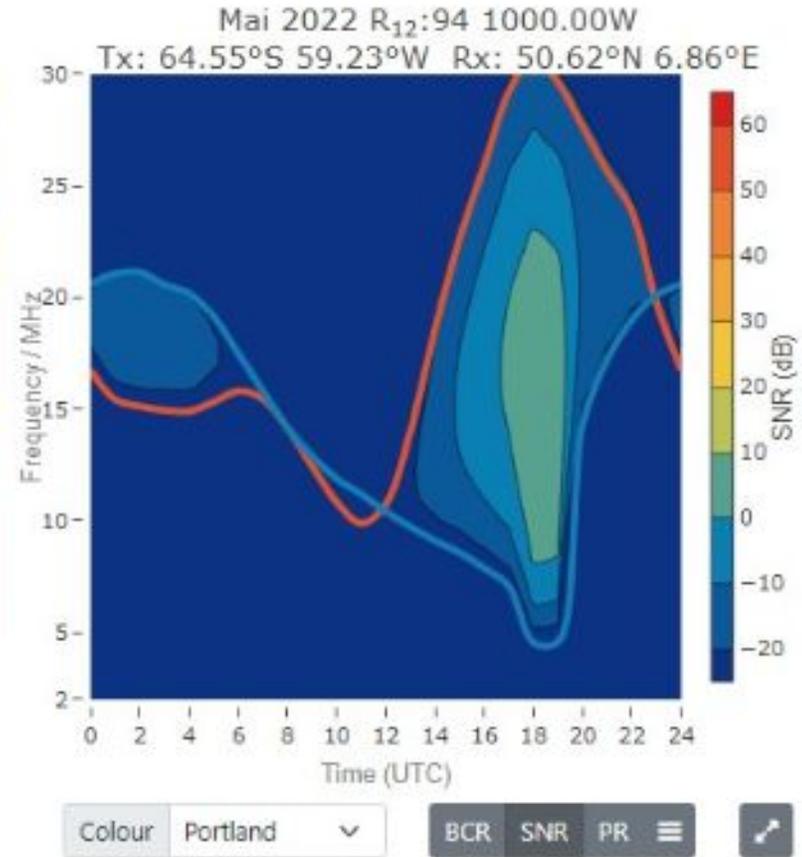
Short Path Yagi @ 15 m Höhe



Run Prediction

Propy HF Circuit Prediction: Point-to-Point

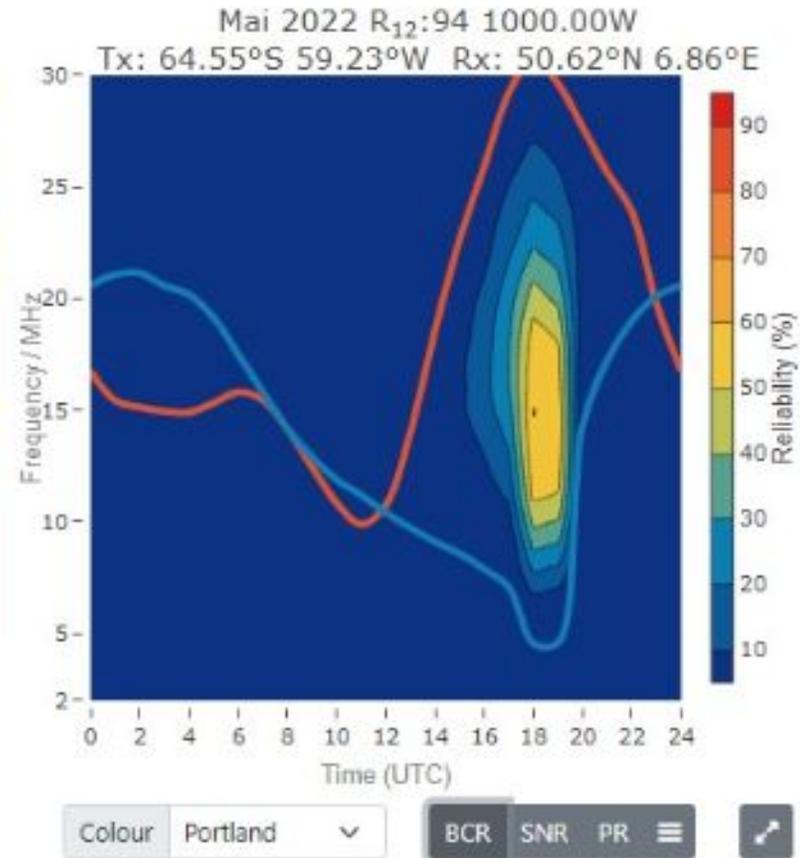
Antg Baff-Yagi @ 15 m Höhe

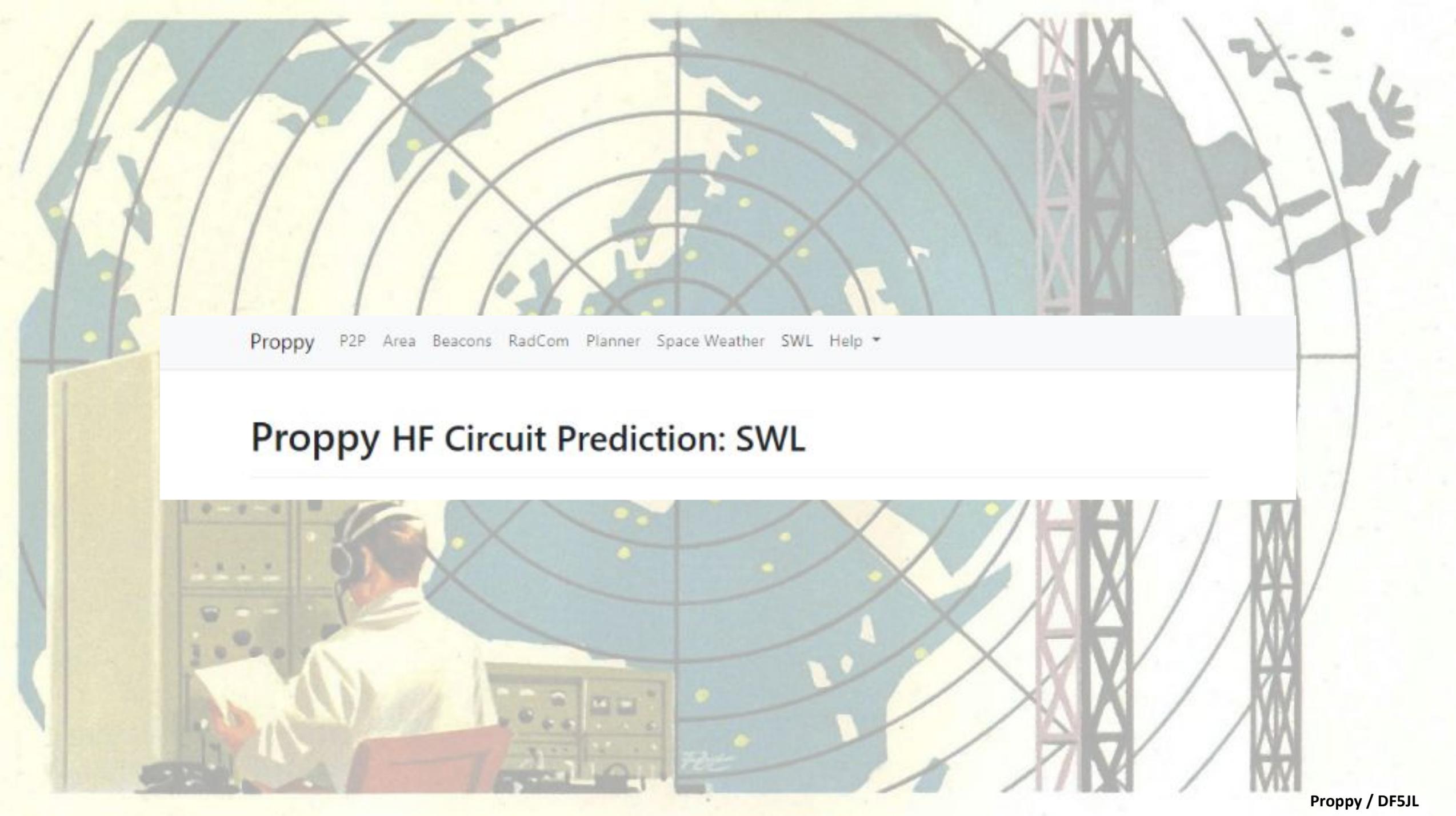


Run Prediction

Propy HF Circuit Prediction: Point-to-Point

Long Path





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Proppy HF Circuit Prediction: SWL

Rx. Site  

Long Path

Latitude

50,62

Longitude

6,86

Search Filters

Freq (kHz/MHz)



15.31



Band



31m (9.400-9.900)



Broadcaster



BBC Worldservice



Language



English



Time



11:04 UTC



CIRAF 



e.g. '18, 27-29'



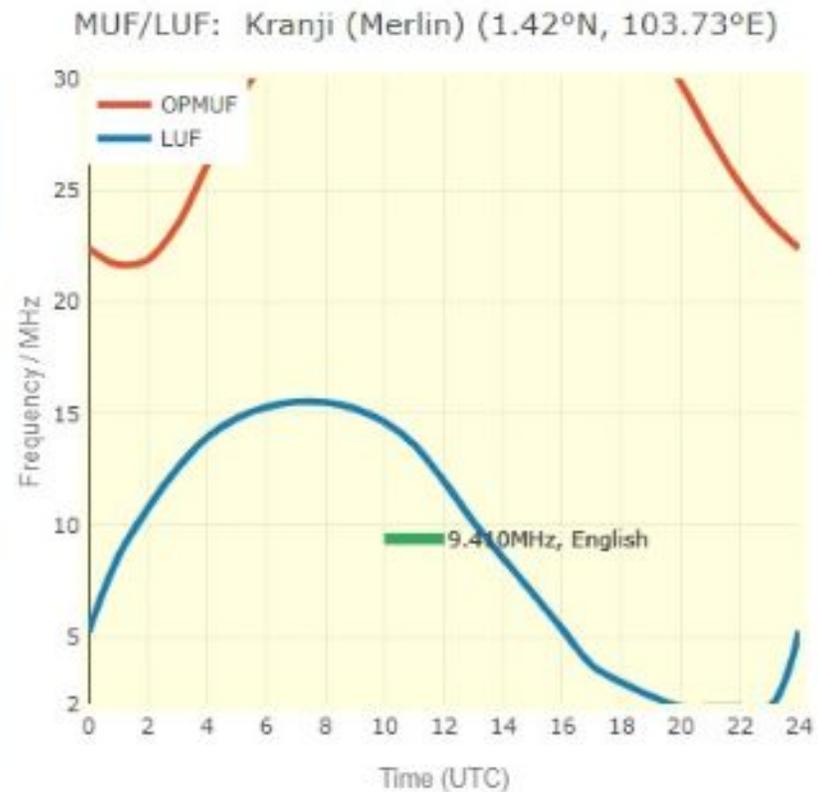
Text



e.g. 'Meyerton'

Search 

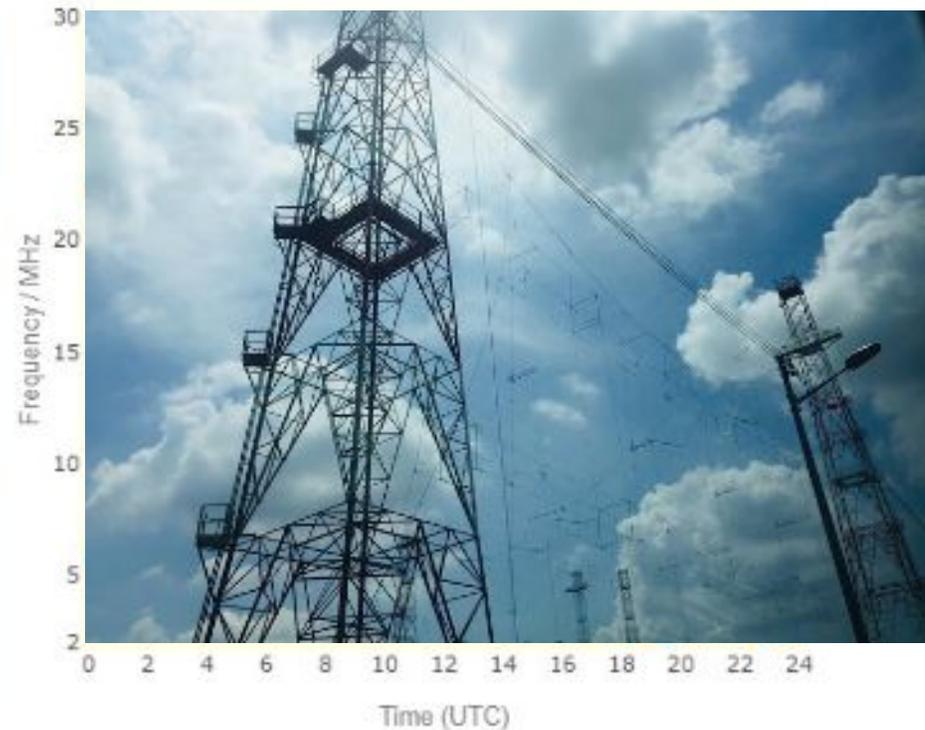
Proppy HF Circuit Prediction: SWL



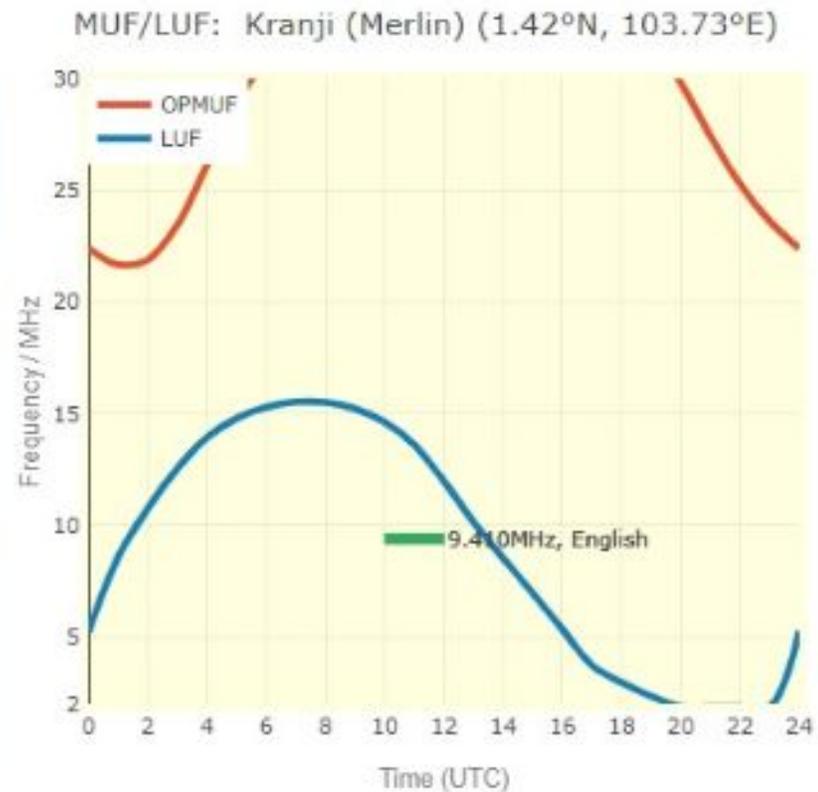
Proppy HF Circuit Prediction: SWL



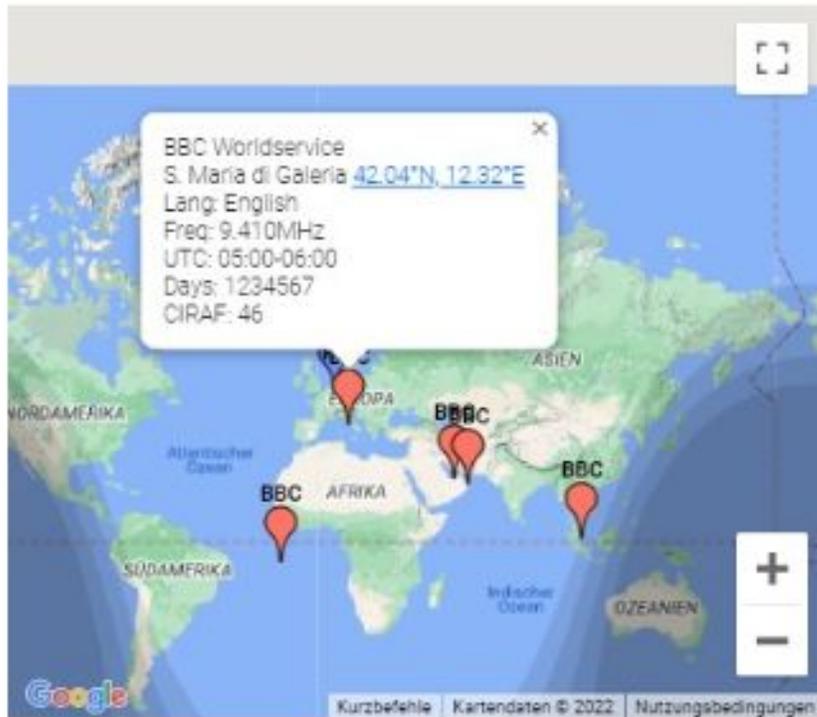
MUF/LUF: Kranji (Merlin) (1.42°N, 103.73°E)



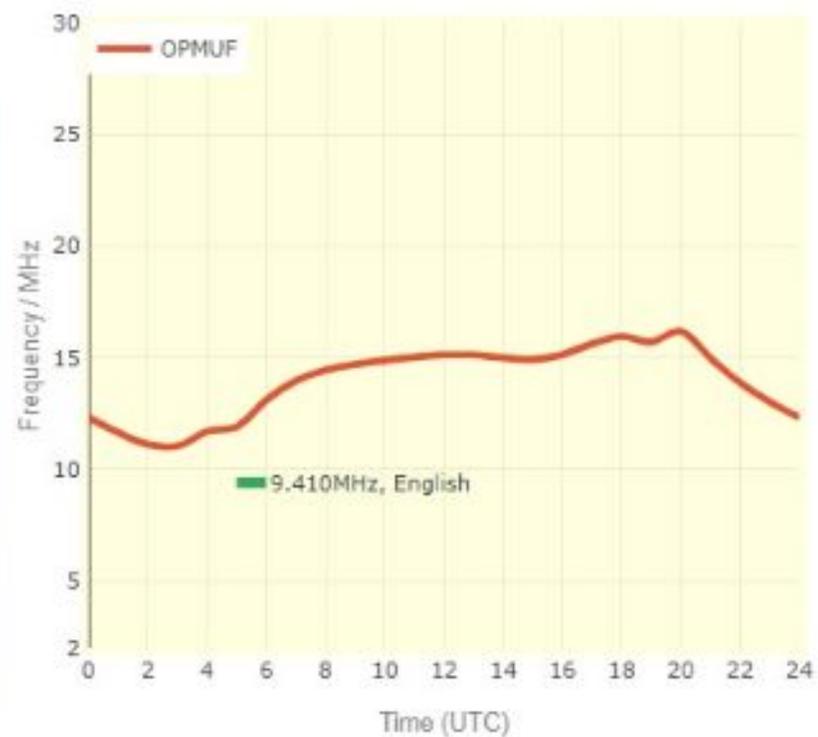
Proppy HF Circuit Prediction: SWL



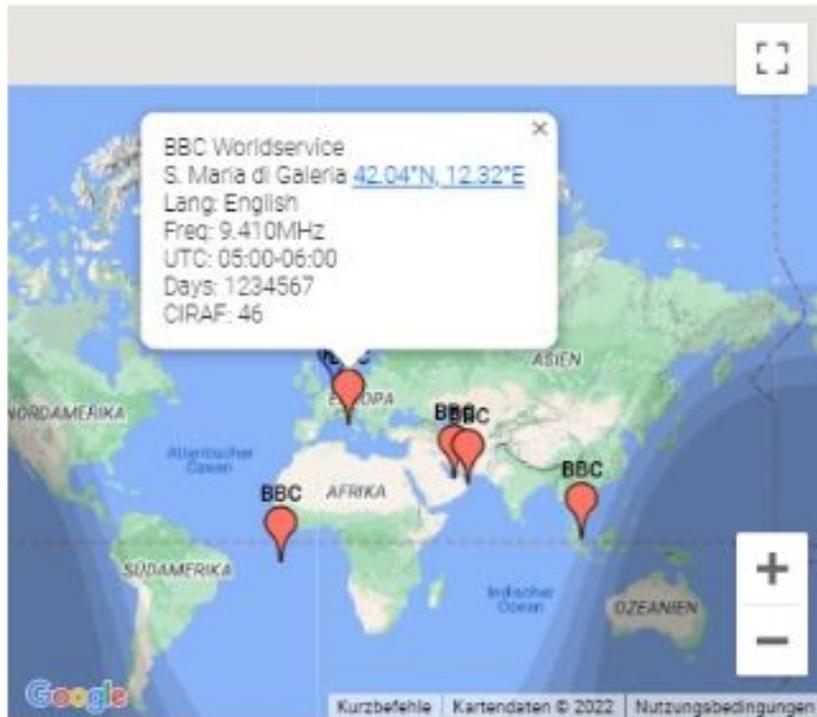
Proppy HF Circuit Prediction: SWL



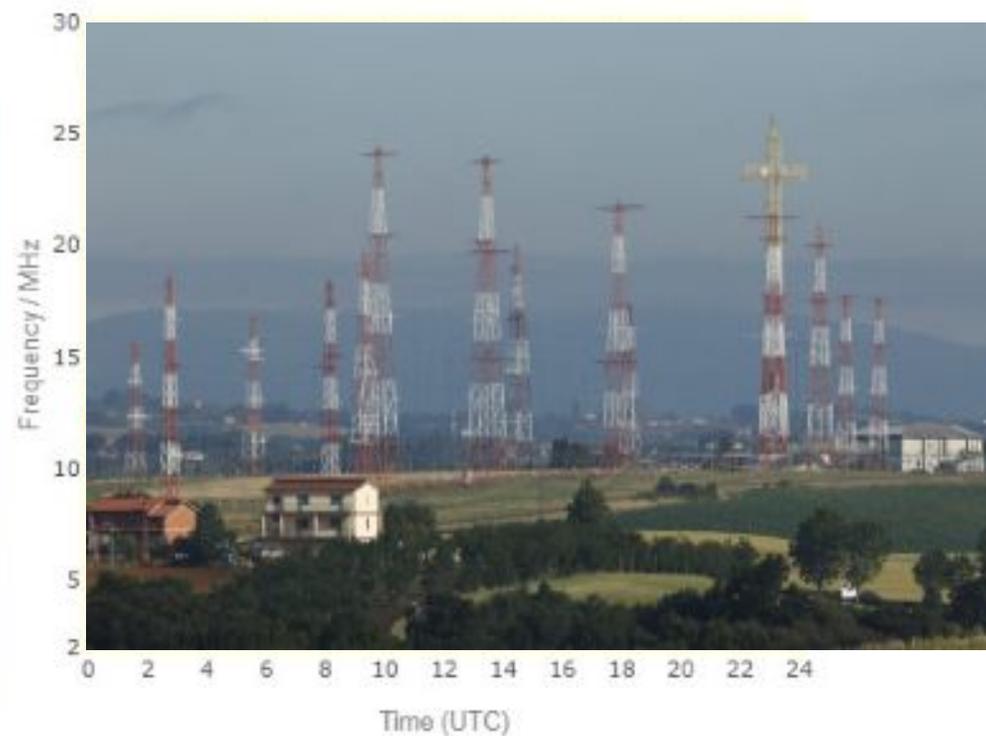
MUF: S. Maria di Galeria (42.04°N, 12.32°E)



Proppy HF Circuit Prediction: SWL



MUF: S. Maria di Galeria (42.04°N, 12.32°E)



Broadcaster ▼ BBC Worldservice ▼ Language ▼ English ▼

Time ▼ 11:04 UTC 🕒 ▶ CIRAF [🔗](#) ▼ e.g. '18, 27-29' 💡 +

Text ▼ e.g. 'Meyerton'

[Search](#) 🔍

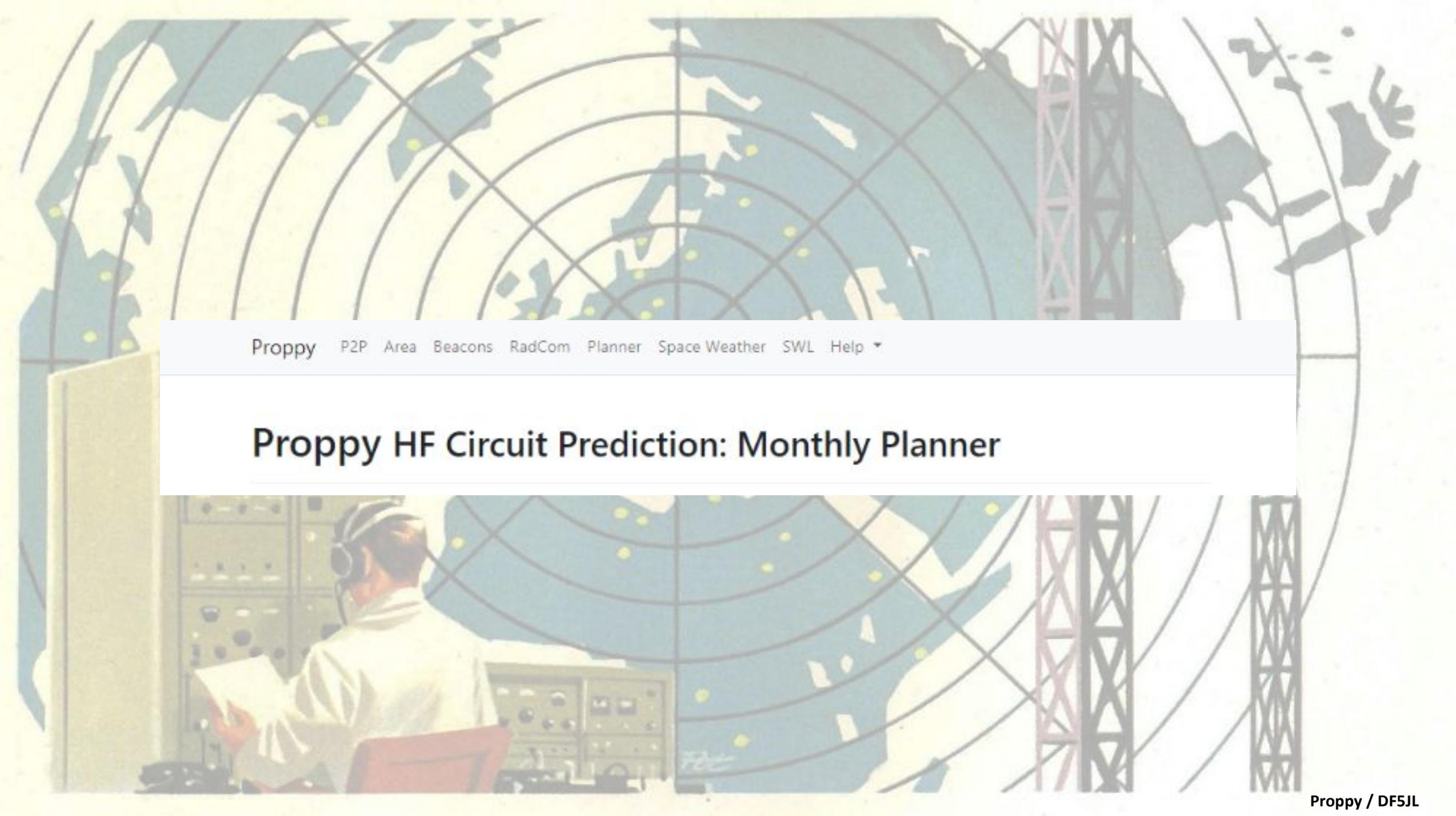
Show entries Search:

Freq.	Broadcaster	UTC	Language	Site
9410	BBC Worldservice	05:00-06:00	English	S. Maria di Galeria
9410	BBC Worldservice	06:00-07:00	English	Ascension
9410	BBC Worldservice	10:00-12:00	English	Kranji (Merlin)
9410	BBC Worldservice	10:00-12:00	English	Kranji (Merlin)
9410	BBC Worldservice	15:00-16:00	English	A'Seela
9410	BBC Worldservice	18:00-19:00	English	Dhabayya
9580	BBC Worldservice	22:00-23:00	English	A'Seela
9740	BBC Worldservice	03:00-04:00	English	A'Seela

Showing 1 to 8 of 8 entries [Previous](#) [1](#) [Next](#)

Data source: [A22all00.TXT](#) (Last updated: Fri May 13 19:24:48 2022)

[Save Table](#) 📄 CSV ▼

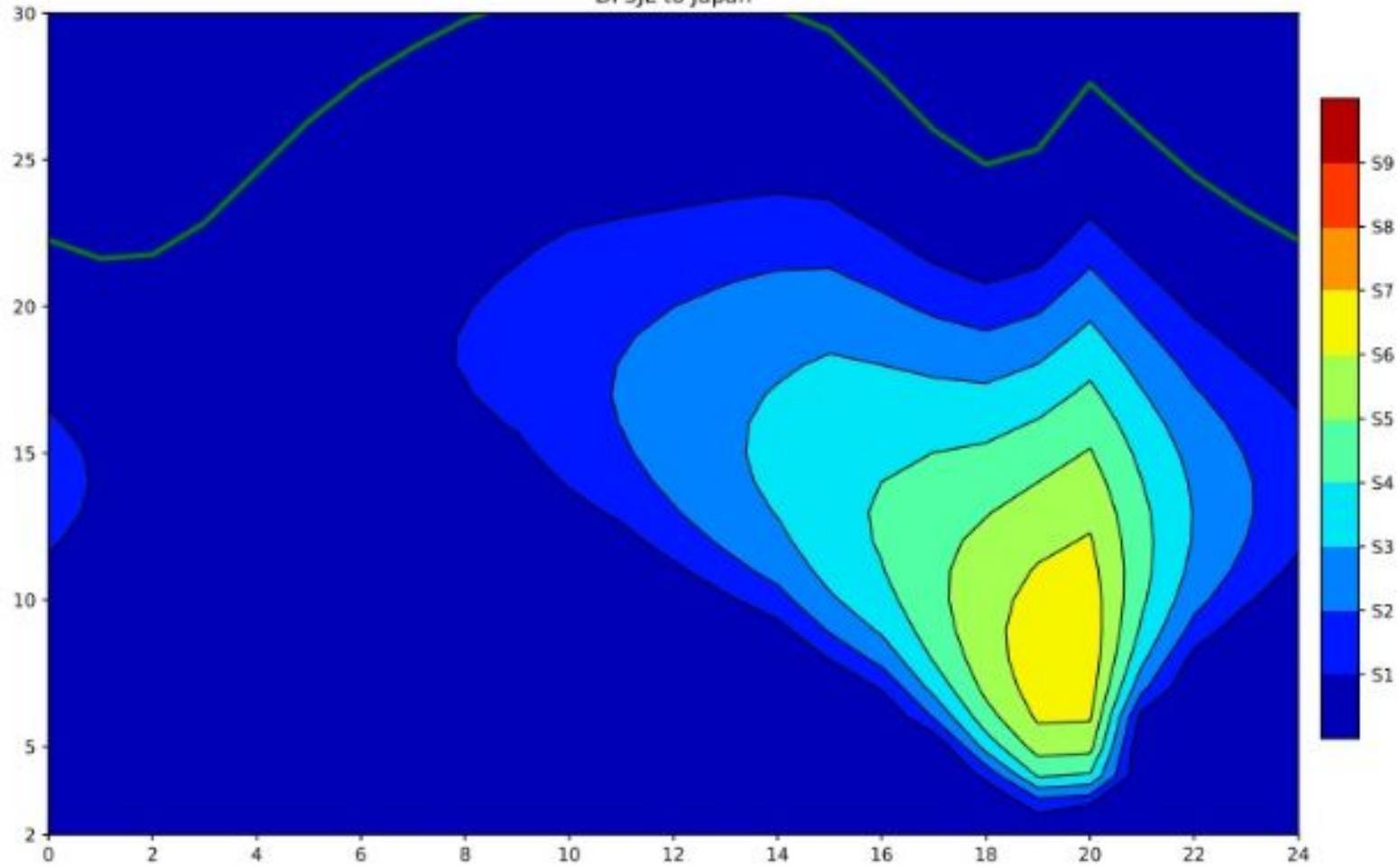


Proppy P2P Area Beacons RadCom Planner Space Weather SWL Help ▾

Proppy HF Circuit Prediction: Monthly Planner

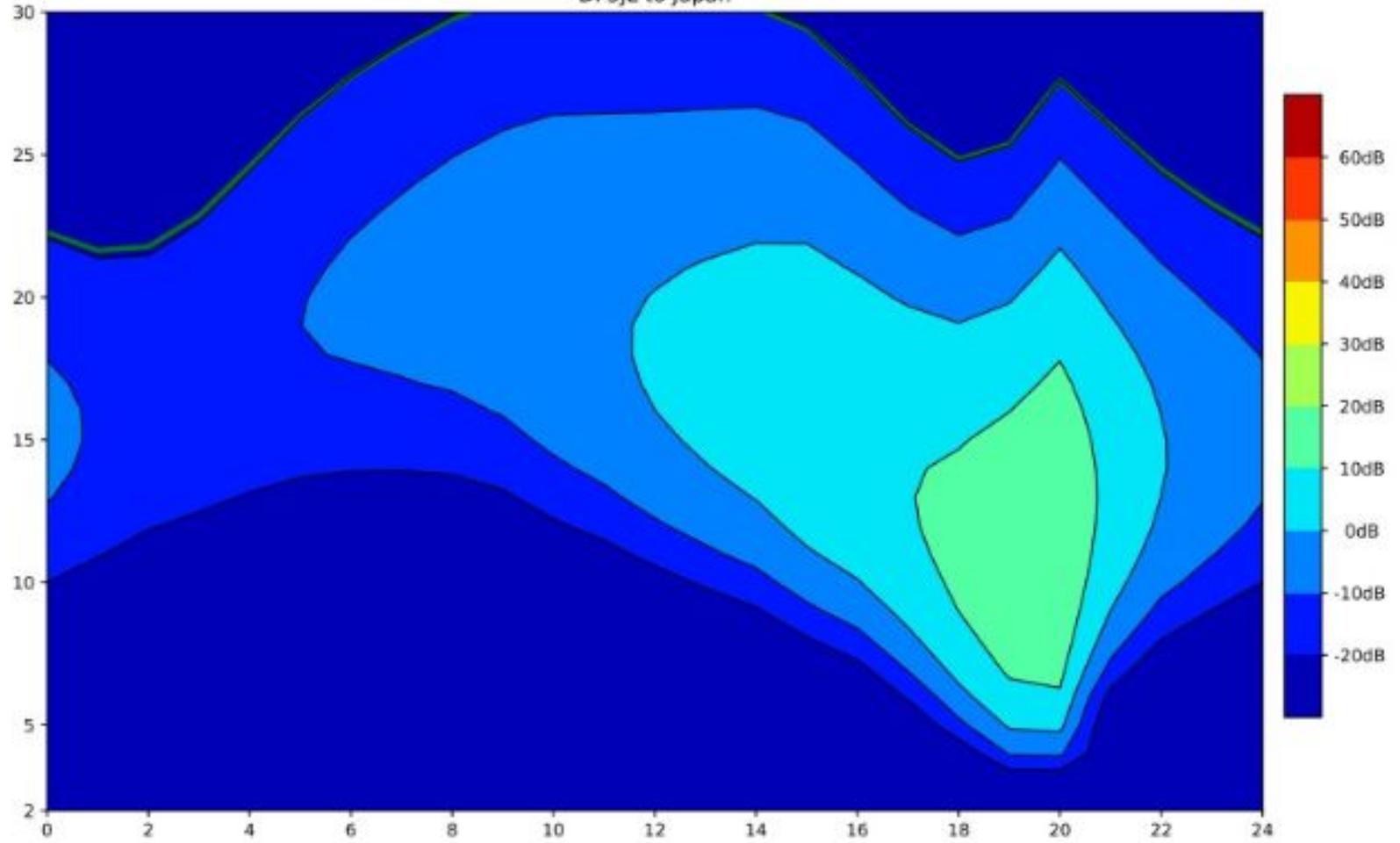
May 2022 ($R_{12}=94.0$) Propagation Planner: Signal Strength

DF5JL to Japan



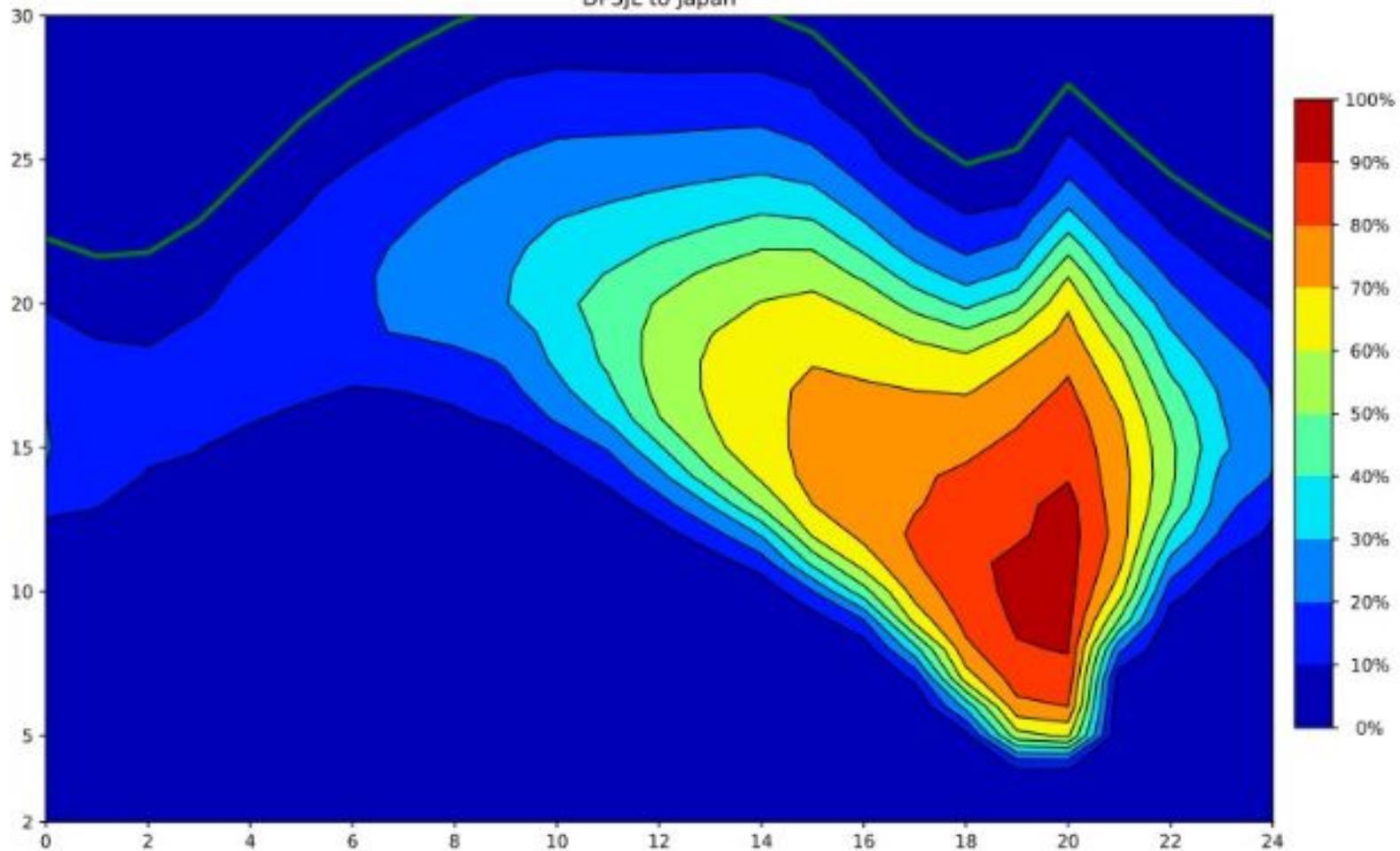
May 2022 ($R_{12}=94.0$) Propagation Planner: SNR

DF5JL to Japan



May 2022 ($R_{12}=94.0$) Propagation Planner: Reliability

DF5JL to Japan



Proppy HF Circuit Prediction: Radcom Predictions

This page has been produced in collaboration with the [RSGB's Propagation Studies Committee \(PSC\)](#) and allows users to create versions of [RadCom's](#) monthly propagation predictions, tailored to their preferred modes and equipment.

Predictions are performed between the user's position, expressed as a [Maidenhead Locator](#) (or the default value of IO92 if not specified, and 28 remote sites. In some cases, performance for both Long and Short paths is evaluated. Results are presented in tables, with colours used to represent the Basic Circuit Reliability (BCR), and numeric values to indicate the predicted median receive power (expressed in [S Levels](#)). For clarity, power levels below -121dBm (S1) are not shown.

Further details of the predictions and a sample input file may be found in the [propgy manual](#).

Run Predictions ↻

System

Date 

Power (W)

Traffic ▾

Man Made Noise ▾

Tx. Site

Locator 

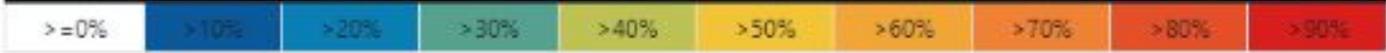
Antenna ▾

Ant Gain (dBi)

Rx. Sites

Antenna ▾

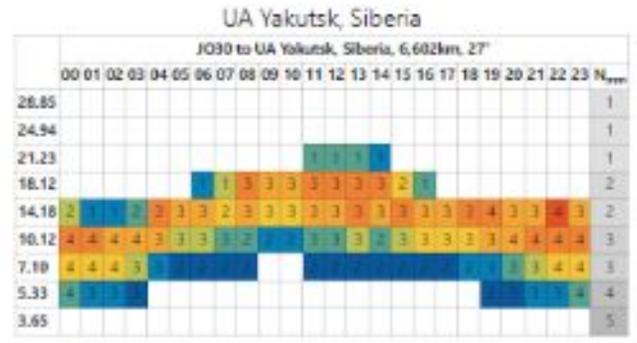
Ant Gain (dBi)



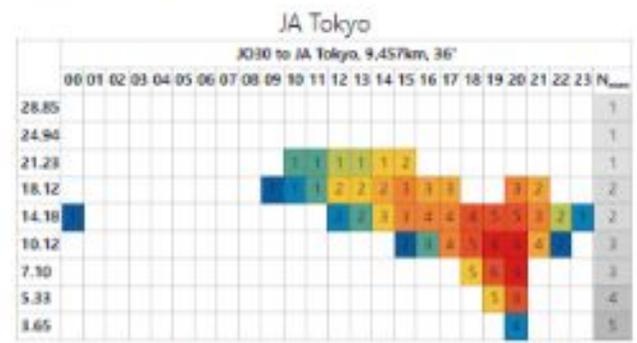
BCR: Basic Circuit Reliability (%)



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz



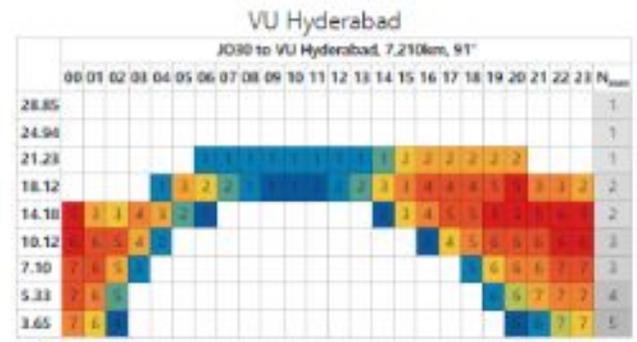
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz



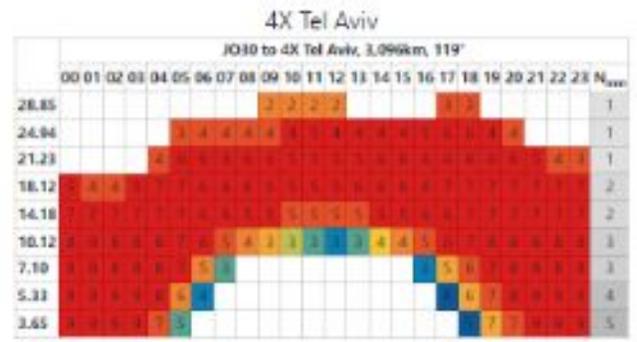
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

ZL Wellington (SP)



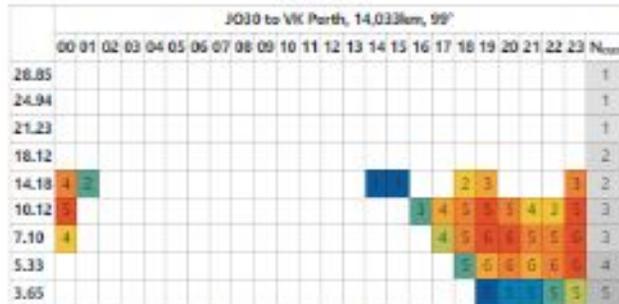
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

ZL Wellington (LP)



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

VK Perth



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

VK Sydney



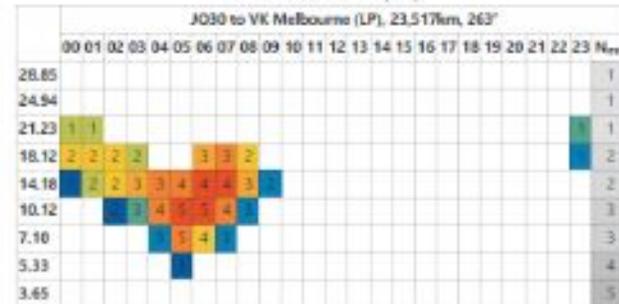
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

VK Melbourne (SP)



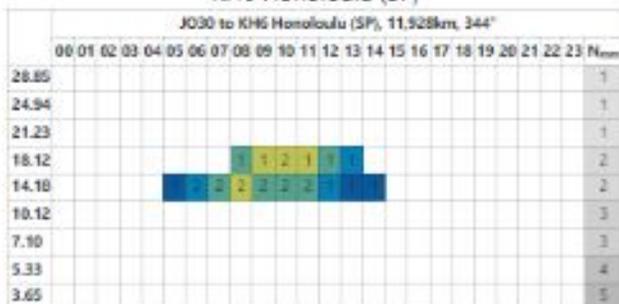
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

VK Melbourne (LP)



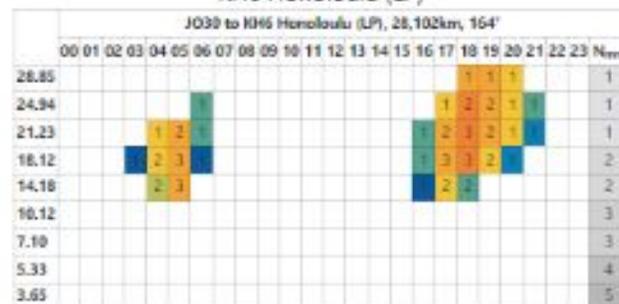
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

KH6 Honolulu (SP)



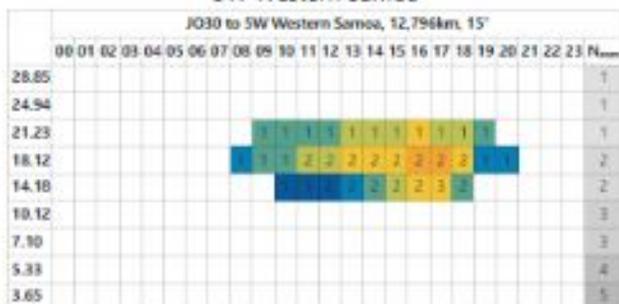
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

KH6 Honolulu (LP)



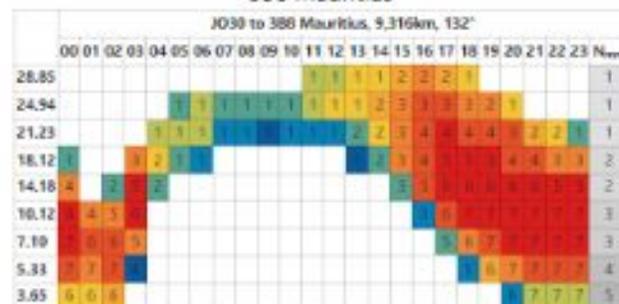
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

5W Western Samoa



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

3B8 Mauritius



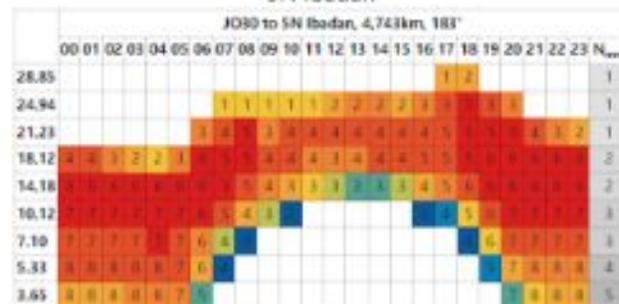
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

ZS Johannesburg



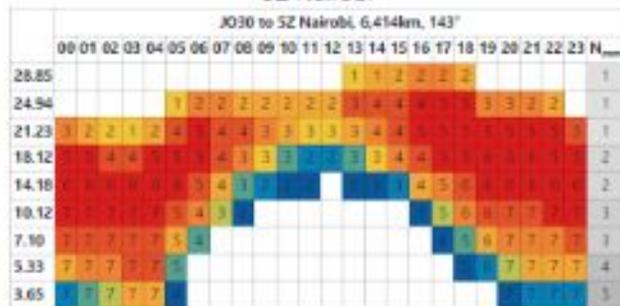
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

5N Ibadan



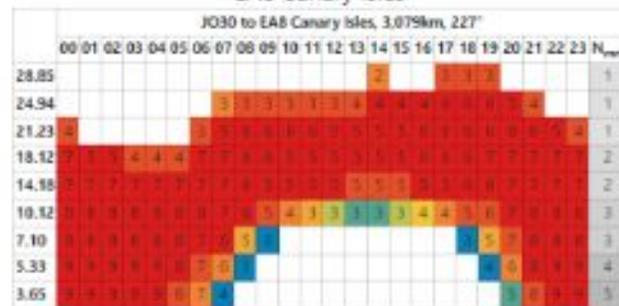
May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

5Z Nairobi



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

EAB Canary Isles



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

LU Buenos Aires



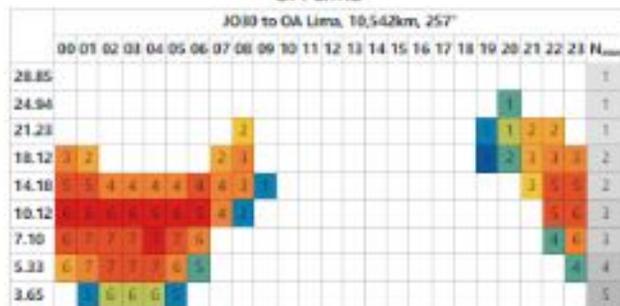
May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

PY Rio de Janeiro



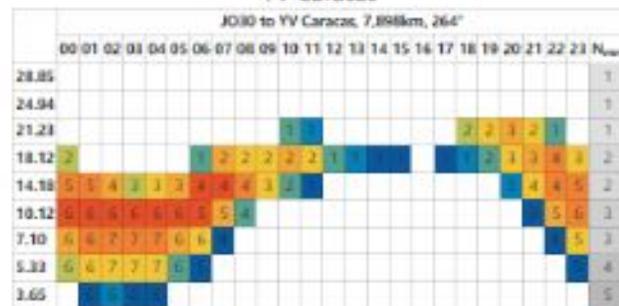
May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

OA Lima



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

YV Caracas



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

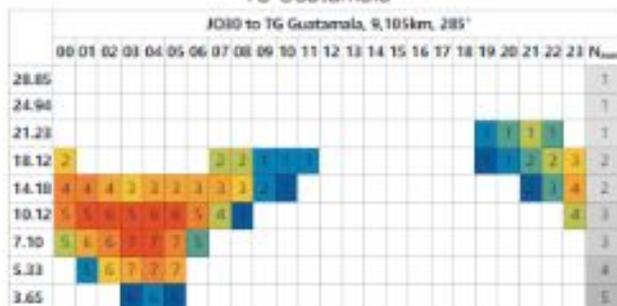
40

41

42

43

TG Guatemala



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

W New Orleans



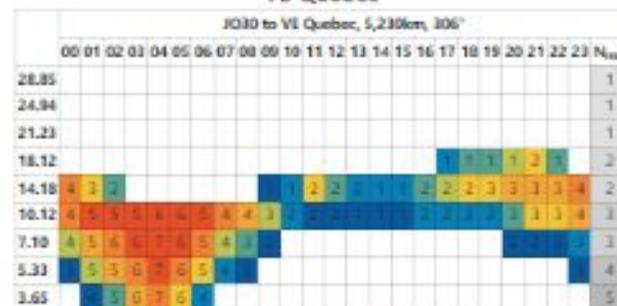
May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

W Washington DC



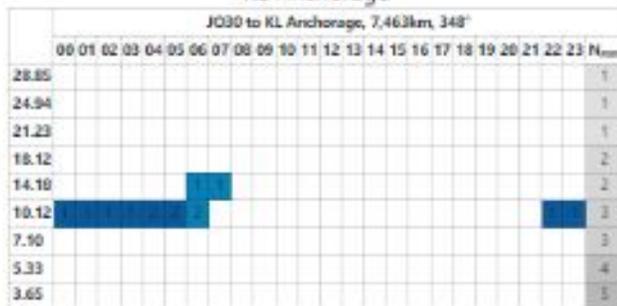
May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

VE Quebec



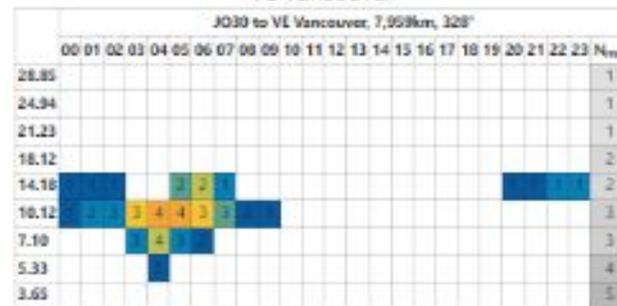
May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

KL Anchorage



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

VE Vancouver



May 2022, SSN: 94, SNR: 0dB, B/W: 500Hz

W San Francisco (SP)



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

W San Francisco (LP)



May 2022, SSN: 94, SNRr: 0dB, B/W: 500Hz

Save Predictions 

Language: [العربية](#) [Deutsch](#) [English](#) [Español](#) [Français](#) [Italiano](#) [Suomi](#)

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RadCom Predictions

May 2022 SSN: 94 (CW)

JO30 to UA Moscow: 2,194km 60°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2
10.12	7	8	8	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3
7.10	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	3
5.33	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4
3.65	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5

JO30 to UA Yakutsk, Siberia: 6,801km 27°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	2	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	
10.12	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
7.10	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
5.33	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	
3.65	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	

JO30 to JA Tokyo: 9,457km 36°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	
10.12	7	8	8	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	
7.10	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	3	
5.33	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	
3.65	9	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	5	

JO30 to 9V Singapore: 10,449km 83°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	
10.12	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	
7.10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	
5.33	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
3.65	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	

JO30 to VU Hyderabad: 7,209km 91°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	2	
10.12	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	3	
7.10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	3	
5.33	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	4	
3.65	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	

JO30 to 4X Tel Aviv: 3,096km 119°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	2	
10.12	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	3	
7.10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	3	
5.33	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	4	
3.65	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	

JO30 to ZL Wellington (SP): 18,714km 46°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18																										2
10.12																										3
7.10																										3

JO30 to ZL Wellington (LP): 21,316km 226°

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	NL	
28.85																										1
24.94																										1
21.23																										1
18.12																										2
14.18																										2
10.12																										3
7.10																										3

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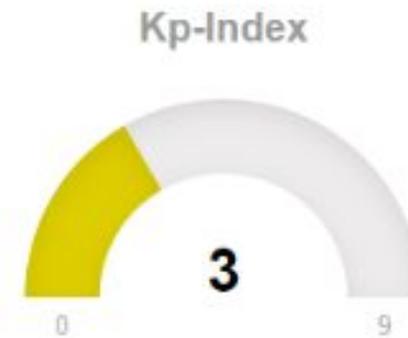
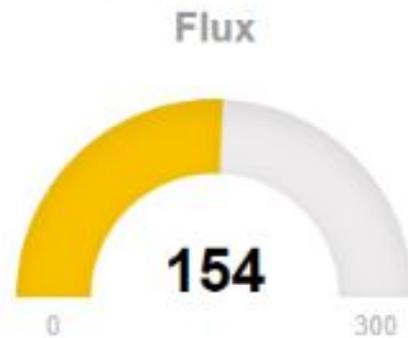
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Proppy HF Circuit Prediction: Space Weather

WWV Report: 16.05.2022, 09:05:00



Previous 24 Hours

No space weather storms were observed for the past 24 hours.

Next 24 Hours

No space weather storms are predicted for the next 24 hours.

Data Source: [noaa.gov](https://www.noaa.gov)

Space Weather Resources

- [Scales \(NOAA\)](#): An explanation of the scales used in the gauges above.
- [Impacts of Space Weather \(NOAA\)](#): A brief summary of the impacts of space weather on radio communication.
- [Understanding Solar Indices \(ARRL\)](#): Ian Poole's excellent introduction to space weather and the various indices by which it's characterised.



Proppy

**...eine kleine Einführung
in ein beliebtes Programm
zur Ausbreitungsvorhersage**

von Tom DF5JL

df5jl@darcd.de