GE84PLN Exercises

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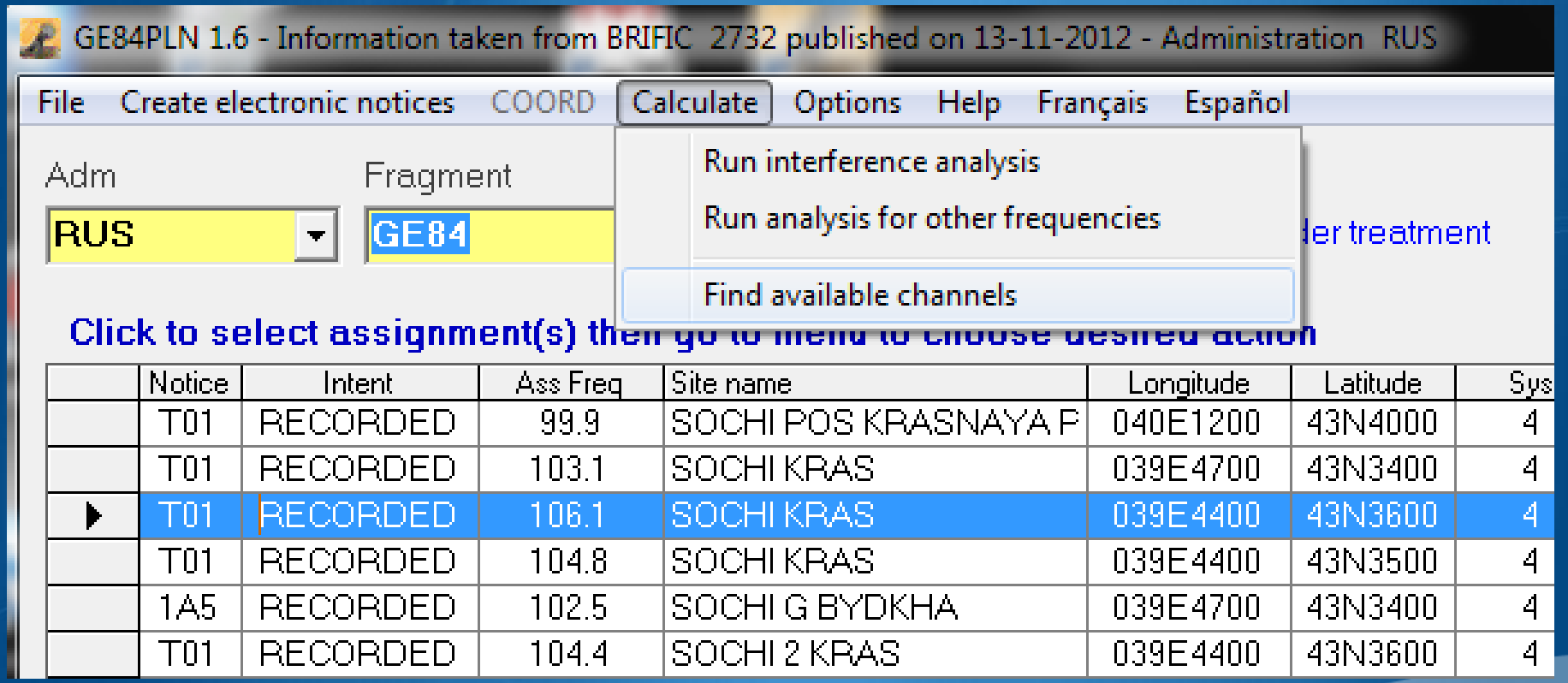
International Telecommunication Union

Broadcasting workshop exercises, WRS10
GE84PLN

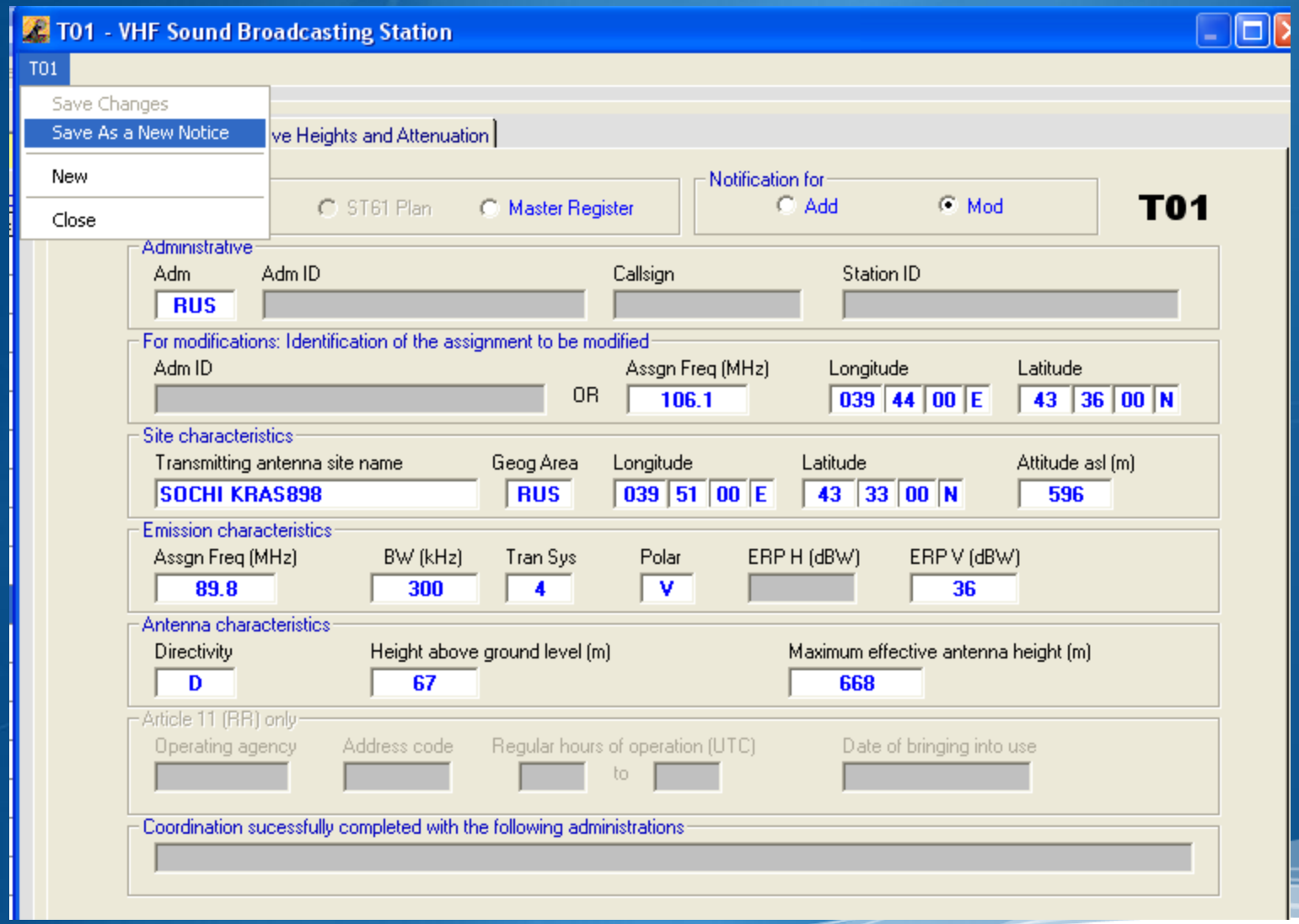
NO	PROGRAM	Task
1	GE84PLN	First select fragment GE84. In Russia (RUS), select one recorded assignment, SOCHI KRAS, 106.1 MHz. Make a frequency search at that site between 88.0-91.0 MHz.

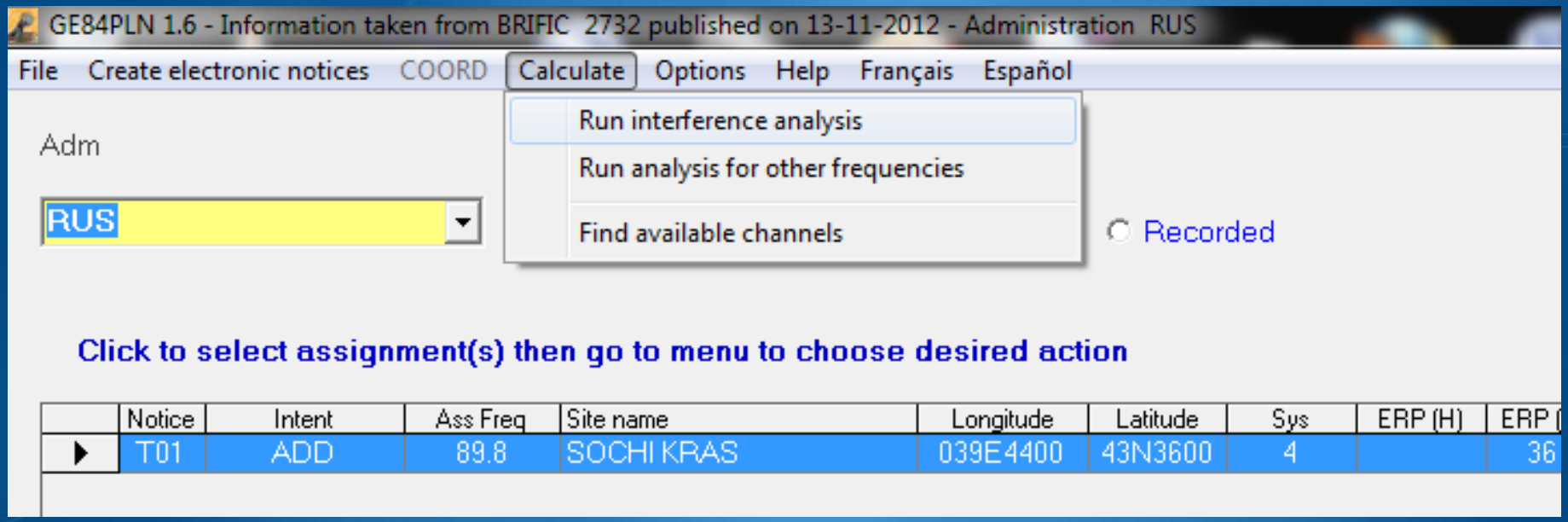

GE84PLN 1.6 - Information taken from BRIFIC 2732 published on 13-11-2012 - Administration RUS
File
Create electronic notices
COORD
Calculate
Options
Help
Français
Español
Run interference analysis
Run analysis for other frequencies
Find available channels
Adm
RUS
Fragment
GE84
Click to select assignment(s) then go to menu to choose desired action
Notice
Intent
Ass Freq
Site name
Longitude
Latitude
Sys
T01 RECORDED 99.9 SOCHI POS KRASNAYA P 040E1200 43N4000 4
T01 RECORDED 103.1 SOCHI KRAS 039E4700 43N3400 4
T01 RECORDED 106.1 SOCHI KRAS 039E4400 43N3600 4
T01 RECORDED 104.8 SOCHI KRAS 039E4400 43N3500 4
1A5 RECORDED 102.5 SOCHI G BYDKHA 039E4700 43N3400 4
T01 RECORDED 104.4 SOCHI 2 KRAS 039E4400 43N3600 4

Assign Freq (MHz)	Max Nuisance Field	Interfering sources (Ctry/Freq/Dist/Nuisance field)
88.0	64 dBu	LAZAREVSKOE KRAS(RUS/87.9MHz/ 47km/64dBu),ERZINCAN(TUR/88.(
88.1	52 dBu	
88.2	67 dBu	LAZAREVSKOE(RUS/88.3MHz/ 47km/67dBu)
88.3	79 dBu	KRASNODAR(RUS/88.3MHz/ 173km/63dBu),LAZAREVSKOE(RUS/88.3M
88.4	67 dBu	LAZAREVSKOE(RUS/88.3MHz/ 47km/67dBu),HOPA(TUR/88.4MHz/ 323km
88.5	56 dBu	KERCH(UKR/88.5MHz/ 320km/56dBu)
88.6	56 dBu	KRASNODAR(RUS/88.7MHz/ 168km/56dBu)
88.7	68 dBu	KRASNODAR(RUS/88.7MHz/ 168km/68dBu),TRABZON(TUR/88.8MHz/ 29
88.8	72 dBu	KRASNODAR(RUS/88.7MHz/ 168km/56dBu),TRABZON(TUR/88.8MHz/ 29
88.9	61 dBu	TRABZON(TUR/88.8MHz/ 293km/60dBu),FEODOSIIA(UKR/88.9MHz/ 385
89.0	58 dBu	GORYACHII KLYUCH KRAS(RUS/89.0MHz/ 122km/58dBu)
89.1	51 dBu	
89.2	63 dBu	SINOP(TUR/89.2MHz/ 426km/63dBu)
89.3	51 dBu	
89.4	55 dBu	
89.5	56 dBu	KARS(TUR/89.5MHz/ 449km/56dBu)
89.6	56 dBu	SHCHOLKINE(UKR/89.6MHz/ 370km/56dBu)
89.7	46 dBu	
89.8	44 dBu	
89.9	49 dBu	

← The maximum nuisance field gives an indication of the Eu at site. The complete analysis also involves calculating caused interference. (if too high frequency is unusable)

2	**GE84PLN**	**Create a new notice to add an assignment using the frequency with the lower usable field strength and run an interference study.**


T01 - VHF Sound Broadcasting Station
T01
Save Changes
Save As a New Notice
New
Close
ve Heights and Attenuation
ST61 Plan
Master Register
Notification for
Add
Mod
T01
Administrative
Adm
RUS
Adm ID
Callsign
Station ID
For modifications: Identification of the assignment to be modified
Adm ID
OR
Assgn Freq (MHz)
106.1
Longitude
039 44 00 E
Latitude
43 36 00 N
Site characteristics
Transmitting antenna site name
SOCHI KRAS898
Geog Area
RUS
Longitude
039 51 00 E
Latitude
43 33 00 N
Attitude asl (m)
596
Emission characteristics
Assgn Freq (MHz)
89.8
BW (kHz)
300
Tran Sys
4
Polar
V
ERP H (dBW)
ERP V (dBW)
36
Antenna characteristics
Directivity
D
Height above ground level (m)
67
Maximum effective antenna height (m)
668
Article 11 (RR) only
Operating agency
Address code
Regular hours of operation (UTC)
to
Date of bringing into use
Coordination sucessfully completed with the following administrations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File
Create electronic notices
COORD
Calculate
Options
Help
Français
Español
Run interference analysis
Run analysis for other frequencies
Find available channels
Adm
RUS
Recorded
Click to select assignment(s) then go to menu to choose desired action
Notice
Intent
Ass Freq
Site name
Longitude
Latitude
Sys
ERP (H)
T01
ADD
89.8
SOCHI KRAS
039E4400
43N3600
4
36

Summary Results - GE84 Compatibility Analysis

Administration RUS

Assign ID	Adm	Intent	Assign Freq (MHz)	Site Name	Longitude	Latitude	ERP-H (dBW)	ERP-V (dBW)	Pol	ND/D	Eusable dBuV/m)
-	RUS	ADD	89.8	SOCHI KRAS	039E4400	43N3600	-	36	V	D	54.60

SOCHI KRAS 89.8MHz - Compatibility Analysis

1. Wanted emission

Assign ID	Adm	Intent	Assign Freq (MHz)	Site Name	Longitude	Latitude	ERP-H (dBW)	ERP-V (dBW)	Pol	ND/D	Eu(dBuV/m)
-	RUS	ADD	89.8	SOCHI KRAS	039E4400	43N3600	-	36	V	D	54.60

2. Interference to other emissions

Assign ID	Adm	Intent	Assign Freq (MHz)	Pol	Site Name	Distances	ERP (dBW)	Azim	PR (dB)	Nuisance FS (dBuV/m)	Eu Ref (dBuV/m)	Eu (dBuV/m)
112084556	RUS	ADD	89.9	V	SLAVYANSK NA KUBANI KRAS	225(T)	36	326	25	50.50	n/a	65.80
109082336	UKR	REC	89.8	V	KOMYSH ZORIA	479(T),143(Z3)	36	331	37	45.00	64.76	68.45
111018783	RUS	REC	89.8	V	VESELYI ROST	395(T)	36	11	37	45.00	64.71	65.15
108119632	UKR	REC	89.9	V	SEVASTOPOL	504(T),409(Z3)	35	285	25	42.70	70.32	n/c
111099235	UKR	REC	89.7	V	SIMFEROPOL	472(T),336(Z3)	33	290	25	40.90	75.69	n/c
106093901	ARM	REC	89.8	V	SPITAK LORI	484(T),23(Z3)	36	128	37	39.10	71.53	n/c
084005468	TUR	REC	89.8	H	YOZGAT	588(T),384(Z3)	36	225	37	37.40	53.19	54.66
101008468	ARM	REC	89.8	V	YEREVAN	548(T),82(Z3)	36	132	37	36.50	74.79	n/c
107083065	RUS	REC	89.7	V	PORT KATON ROST	372(T),9(Z3)	36	348	25	34.70	48.00	74.34
109082516	UKR	REC	90.0	V	SUDAK	406(T),339(Z3)	33	292	7	29.30	74.28	n/c

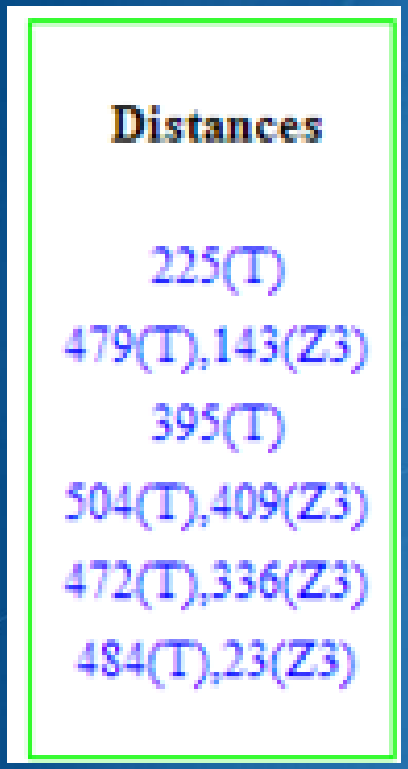
Caused Interference

Assign ID	Adm	Intent	Assign Freq (MHz)	Pol	Site Name	Distances	ERP (dBW)	Azim	PR (dB)	Nuisance FS (dBuV/m)	Eu Ref (dBuV/m)	Eu (dBuV/m)
112084556	RUS	ADD	89.9	V	SLAVYANSK NA KUBANI	225(T)	36	326	25	50.50	n/a	65.80
109082336	UKR	REC	89.8	V	KOMYSH ZORIA	479(T),143(Z3)	36	331	37	45.00	64.76	68.45
111018783	RUS	REC	89.8	V	VESELYI ROST	395(T)	36	11	37	45.00	64.71	65.15
108119632	UKR	REC	89.9	V	SEVASTOPOL	504(T),409(Z3)	35	285	25	42.70	70.32	n/c
111099235	UKR	REC	89.7	V	SIMFEROPOL	472(T),336(Z3)	33	290	25	40.90	75.69	n/c
106093901	ARM	REC	89.8	V	SPITAK LORI	484(T),23(Z3)	36	128	37	39.10	71.53	n/c

Assign ID	Adm	Intent	Assign Freq (MHz)	Pol	Site Name
112084556	RUS	ADD	89.9	V	SLAVYANSK NA KUBANI
109082336	UKR	REC	89.8	V	KOMYSH ZORIA
111018783	RUS	REC	89.8	V	VESELYI ROST
108119632	UKR	REC	89.9	V	SEVASTOPOL
111099235	UKR	REC	89.7	V	SIMFEROPOL
106093901	ARM	REC	89.8	V	SPITAK LORI

According to 4.3.7.1 you should verify if any stations of other Administrations have an Eu increase of 0.5 dB or more.

←Usually you don't have to worry about interference caused to stations of your own Administration.



← Sum all the segments to obtain the total distance site to site.

Propagation zones According to Chapter 2 , No 2.1.1
-T (terre / Land)
-Z2 (mer froide / Cold Sea)
-Z3 (mer chaude / Warm Sea)
-Z4 (S-refractivité / S-refractivity

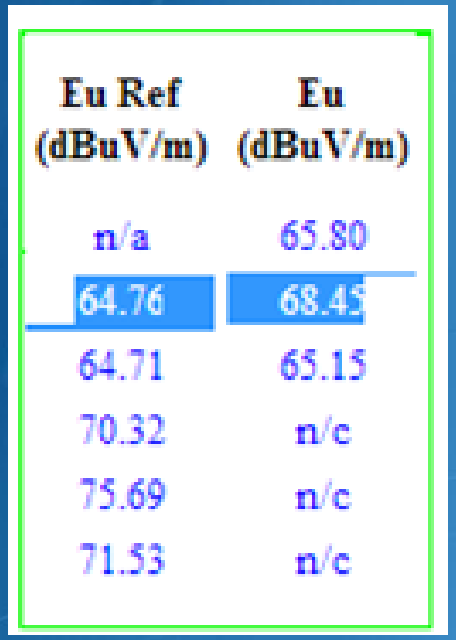
ERP at pertinent Azimuth →

ERP (dBW)	Azim	PR (dB)	Nuisance FS (dBuV/m)
36	326	25	50.50
36	331	37	45.00
36	11	37	45.00
35	285	25	42.70
33	290	25	40.90
36	128	37	39.10

← NFS = Fs received + PR

Protection ration from tables 2.1 to 2.3 ↑
(depends on F. spacing and T. system)

Eu Ref* : → Eu calculated at the time the assignment entered the Plan



Eu Ref (dBuV/m)	Eu (dBuV/m)
n/a	65.80
64.76	68.45
64.71	65.15
70.32	n/c
75.69	n/c
71.53	n/c

← Diff > 0.5 dB; if this is a station from another Administration, they can object according to 4.3.7.1

← n/c : Eu is not calculated (n/c) for the case Nuisance FS is 10dB (user selectable) below Eu Ref

* n/a means Eu Ref does not exist for modifications under treatment

Received Interference

3. Interference from other emissions

Assign ID	Adm	Intent	Assign Freq (MHz)	Pol	Site name	Distances	ERP (dBW)	Azim	PR (dB)	Nuisance FS dbuV/m
109082336	UKR	REC	89.8	V	KOMYSH ZORIA	479(T),143(Z3)	35	149	37	44.40
108119632	UKR	REC	89.9	V	SEVASTOPOL	504(T),409(Z3)	34	100	25	40.80
111099235	UKR	REC	89.7	V	SIMFEROPOL	472(T),336(Z3)	35	107	25	39.00
111018783	RUS	REC	89.8	V	VESELYI ROST	395(T)	30	192	37	38.00
084005468	TUR	REC	89.8	H	YOZGAT	588(T),384(Z3)	37	42	37	37.10

Assign ID	Adm	Intent	Assign Freq (MHz)	Pol	Site name
109082336	UKR	REC	89.8	V	KOMYSH ZORIA
108119632	UKR	REC	89.9	V	SEVASTOPOL
111099235	UKR	REC	89.7	V	SIMFEROPOL
111018783	RUS	REC	89.8	V	VESELYI ROST
084005468	TUR	REC	89.8	H	YOZGAT

←Info on interferers.

Dist.,ERP PR & NFS Same definition as before

Distances	ERP (dBW)	Azim	PR (dB)	Nuisance FS dbuV/m
479(T),143(Z3)	35	149	37	44.40
504(T),409(Z3)	34	100	25	40.80
472(T),336(Z3)	35	107	25	39.00
395(T)	30	192	37	38.00
588(T),384(Z3)	37	42	37	37.10

Eu(dBuV/m)
54.60

Calculation of the usable field strength ↑ using the simple multiplication method as described in Chapter 4.