GE84PLN Exercises

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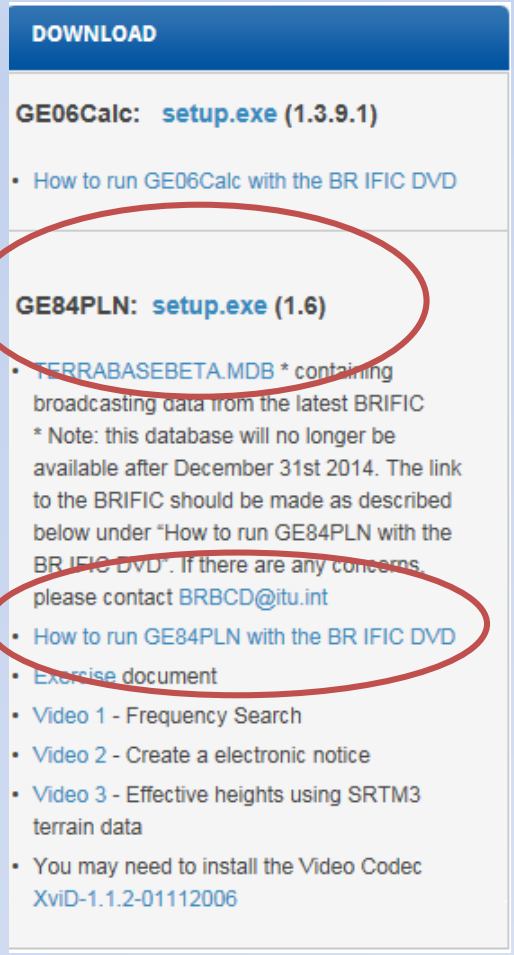
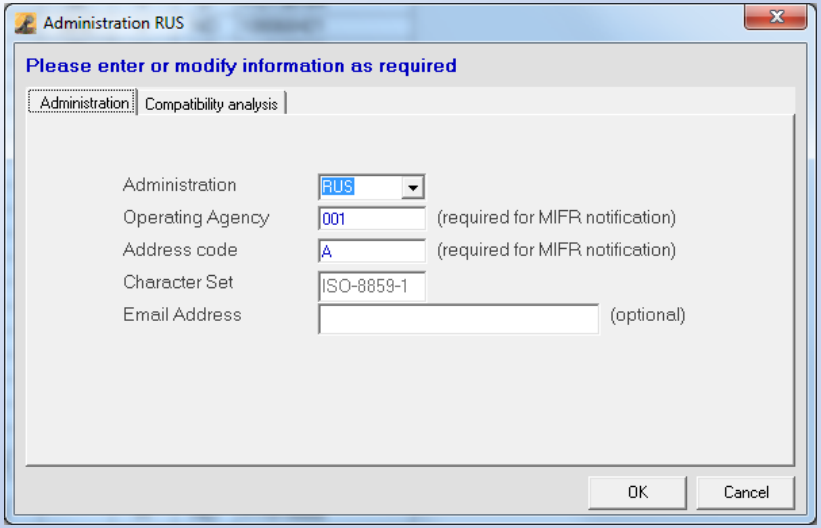
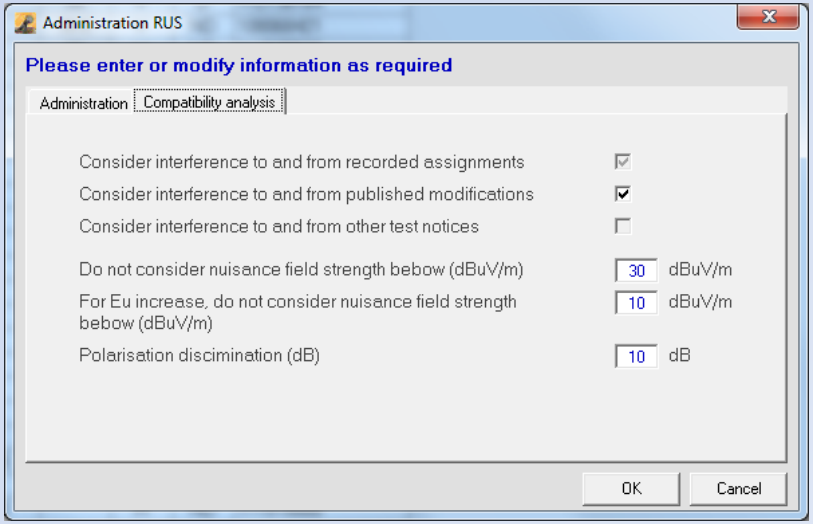
Download GE84PLN

http://www.itu.int/en/ITU-R/terrestrial/broadcast/Pages/Services.aspx



Select the preferences

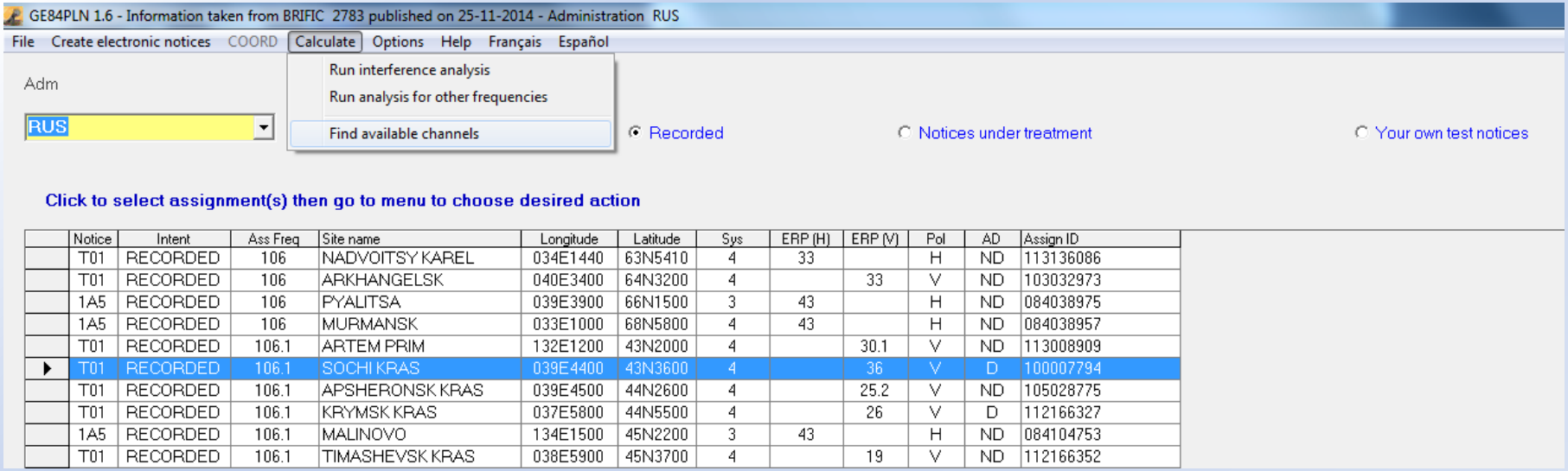




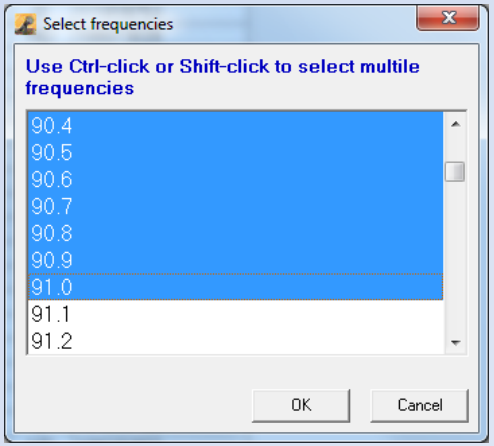
GE84PLN – Exercise 1

No	Software	Task
1	GE84PLN 1.6	1. Select the GE84 fragment 2. Select the administration of RUS 3. Select one recorded assignment, SOCHI KRAS, 106.1 MHz. 4. Highlight the record 5. Make a frequency search at that site between 88.0-88.5 MHz.

Find available channels



	Notice	Intent	Ass Freq	Site name	Longitude	Latitude	Sys	ERP (H)	ERP (V)	Pol	AD	Assign ID
	T01	RECORDED	106	NADVOITSY KAREL	034E1440	63N5410	4	33		H	ND	113136086
	T01	RECORDED	106	ARKHANGELSK	040E3400	64N3200	4		33	V	ND	103032973
	1A5	RECORDED	106	PYALITSA	039E3900	66N1500	3	43		H	ND	084038975
	1A5	RECORDED	106	MURMANSK	033E1000	68N5800	4	43		H	ND	084038957
	T01	RECORDED	106.1	ARTEM PRIM	132E1200	43N2000	4		30.1	V	ND	113008909
▶	T01	RECORDED	106.1	SOCHI KRAS	039E4400	43N3600	4		36	V	D	100007794
	T01	RECORDED	106.1	APSHERONSK KRAS	039E4500	44N2600	4		25.2	V	ND	105028775
	T01	RECORDED	106.1	KRYMSK KRAS	037E5800	44N5500	4		26	V	D	112166327
	1A5	RECORDED	106.1	MALINOVO	134E1500	45N2200	3	43		H	ND	084104753
	T01	RECORDED	106.1	TIMASHEVSK KRAS	038E5900	45N3700	4		19	V	ND	112166352



Find the most suitable channel

Channel Availability Analysis - GE84

Information taken from BRIFIC 2783 published on 25-11-2014

Administration RUS

Site name SOCHI KRAS 039E4400 43N3600

System 4 Polarisation V

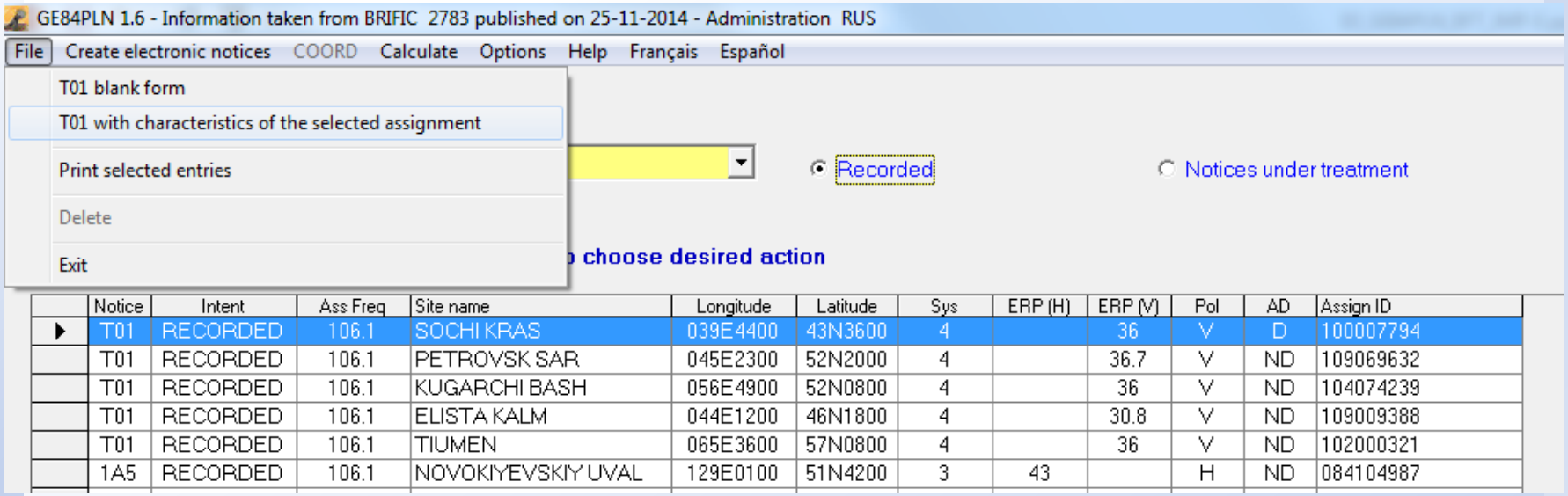
Assign Freq (MHz)	Max Nuisance Field	Interfering sources (Ctry/Freq/Dist/Nuisance field)
88.0	64 dBu	LAZAREVSKOE KRAS(RUS/87.9MHz/ 47km/64dBu),ERZINCAN(TUR/88.0MHz/ 414km/57dBu),GELENDZHIK KRAS(RUS/88.0MHz/ 169km/58dBu)
88.1	52 dBu	
88.2	67 dBu	LAZAREVSKOE(RUS/88.3MHz/ 47km/67dBu)
88.3	79 dBu	KRASNODAR(RUS/88.3MHz/ 173km/63dBu),LAZAREVSKOE(RUS/88.3MHz/ 47km/79dBu)
88.4	67 dBu	LAZAREVSKOE(RUS/88.3MHz/ 47km/67dBu),HOPA(TUR/88.4MHz/ 323km/59dBu)
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/ 293km/60dBu)
88.8	72 dBu	KRASNODAR(RUS/88.7MHz/ 168km/56dBu),TRABZON(TUR/88.8MHz/ 293km/72dBu)
88.9	61 dBu	TRABZON(TUR/88.8MHz/ 293km/60dBu),FEODOSIIA(UKR/88.9MHz/ 385km/61dBu)
89.0	58 dBu	GORYACHII KLYUCH KRAS(RUS/89.0MHz/ 122km/58dBu)
89.1	58 dBu	GELENDZHIK KRAS(RUS/89.1MHz/ 169km/58dBu)
89.2	63 dBu	SINO
89.3	51 dBu	
89.4	55 dBu	
89.5	56 dBu	KARS

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

GE84PLN – Exercise 2

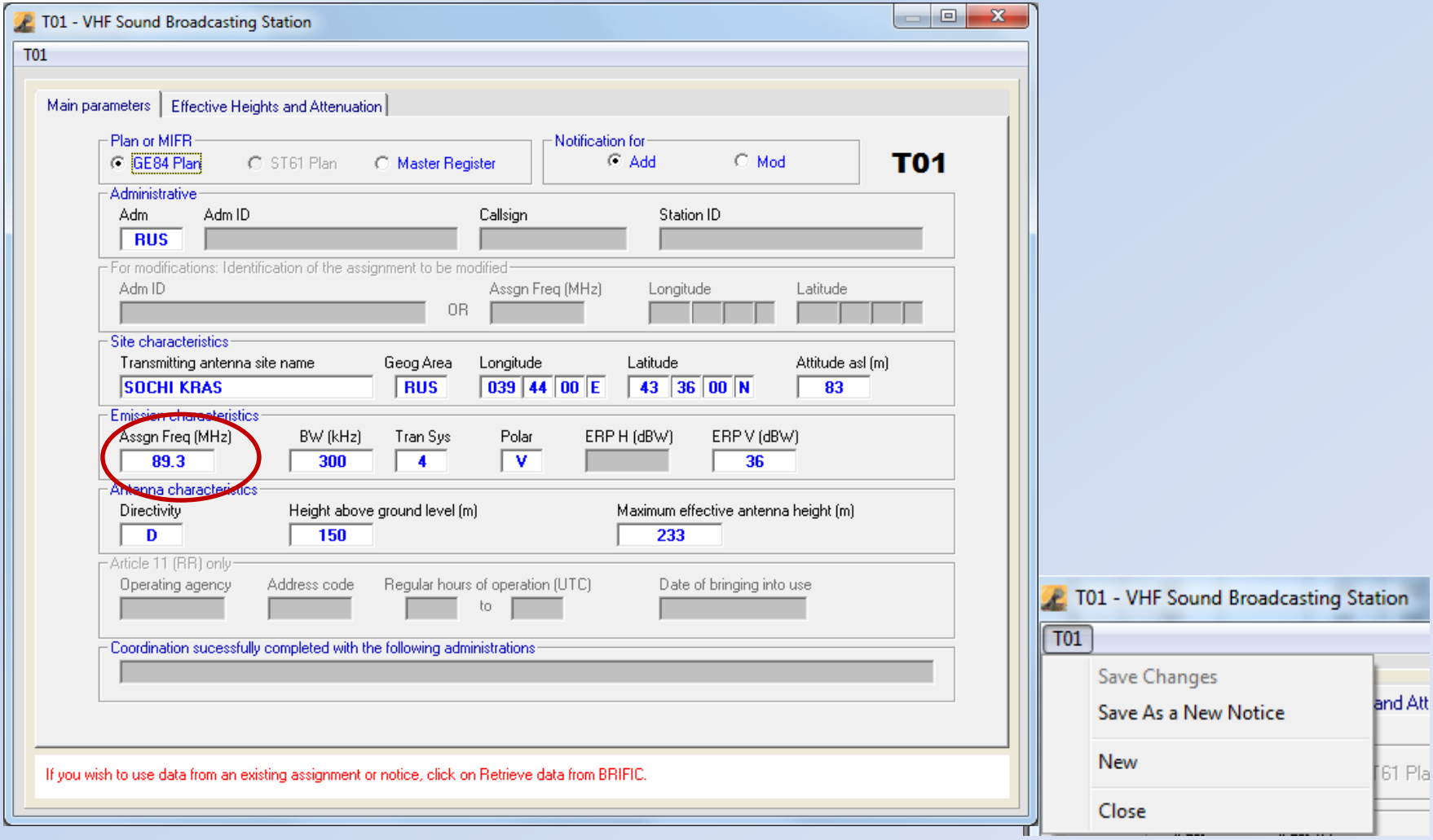
No	Software	Task
2	GE84PLN 1.6	1. Create a test notice from SOCHI KRAS 106.1 MHz (see next slides) 2. Change the frequency to the frequency previously identified which receives the lowest max. nuisance field. Save the File. 3. Analyze the results.

Generate an electronic notice

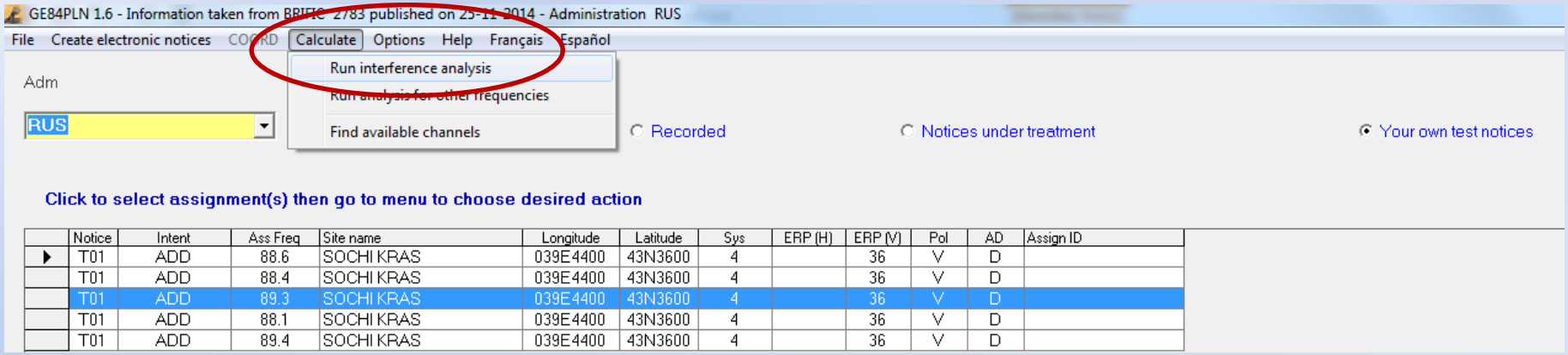


Notice	Intent	Ass Freq	Site name	Longitude	Latitude	Sys	ERP (H)	ERP (V)	Pol	AD	Assign ID
T01	RECORDED	106.1	SOCHI KRAS	039E4400	43N3600	4		36	V	D	100007794
T01	RECORDED	106.1	PETROVSK SAR	045E2300	52N2000	4		36.7	V	ND	109069632
T01	RECORDED	106.1	KUGARCHI BASH	056E4900	52N0800	4		36	V	ND	104074239
T01	RECORDED	106.1	ELISTA KALM	044E1200	46N1800	4		30.8	V	ND	109009388
T01	RECORDED	106.1	TIUMEN	065E3600	57N0800	4		36	V	ND	102000321
1A5	RECORDED	106.1	NOVOKIYEVSKIY UVAL	129E0100	51N4200	3	43		H	ND	084104987

Generate an electronic notice



Run analysis on the new notice



Notice	Intent	Ass Freq	Site name	Longitude	Latitude	Sys	ERP (H)	ERP (V)	Pol	AD	Assign ID
T01	ADD	88.6	SOCHI KRAS	039E4400	43N3600	4		36	V	D	
T01	ADD	88.4	SOCHI KRAS	039E4400	43N3600	4		36	V	D	
T01	ADD	89.3	SOCHI KRAS	039E4400	43N3600	4		36	V	D	
T01	ADD	88.1	SOCHI KRAS	039E4400	43N3600	4		36	V	D	
T01	ADD	89.4	SOCHI KRAS	039E4400	43N3600	4		36	V	D	

Detailed Analysis at 89.3MHz

SOCHI KRAS 89.3MHz - 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	89.3	SOCHI KRAS	039E4400	43N3600	-	36	V	D	59.34

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)
111056198	UKR	REC	89.3	V	SIMFEROPOL	472(T),336(Z3)	33	290	37	52.90	71.46	n/c
113217838	RUS	REC	89.2	V	KURGANINSK KRAS	160(T)	36	25	25	49.90	68.28	n/c
109022071	RUS	REC	89.3	V	EISK KRAS	365(T)	36	342	37	47.90	66.63	n/c
108101882	RUS	REC	89.2	V	PIATIGORSK STAVR	272(T)	36	78	25	43.70	57.37	n/c
113028293	RUS	REC	89.5	V	GORIACHII KLIUCH KRAS	126(T)	36	339	7	43.20	67.34	n/c
113015420	RUS	REC	89.1	V	GELENDZHIK KRAS	169(T),28(Z3)	36	311	7	42.10	69.01	n/c
084005414	TUR	REC	89.2	H	SINOP	427(T),419(Z3)	36	247	25	42.00	56.77	n/c
114050234	RUS	ADD	89.5	V	GELENDZHIK GORA DOOB KRAS	180(T),38(Z3)	36	309	7	41.30	n/a	74.90
084005396	TUR	REC	89.4	H	RIZE	290(T),254(Z3)	27	168	25	40.60	73.08	n/c
113279710	RUS	REC	89.5	V	BELORECHENSK KRAS	129(T)	36	6	7	38.90	71.73	n/c
110090780	UKR	REC	89.3	V	NIKOPOL	610(T),209(Z3)	36	319	37	36.70	65.62	n/c
101008469	ARM	REC	89.3	V	YEREVAN	548(T),82(Z3)	36	132	37	36.50	77.03	n/c
111020168	RUS	REC	89.3	V	GROZNYI G YASTREBINAYA CHECH	486(T)	36	90	37	36.00	55.34	n/c
106093910	ARM	REC	89.3	V	TSAKHASHAT LORI	498(T)	36	123	37	34.80	72.41	n/c
109082355	UKR	REC	89.4	V	KRASNOPEREKOPSK	541(T),298(Z3)	33	301	25	33.20	65.88	n/c
113282022	RUS	REC	89.5	V	TRUDOBELIKOVSKII KRAS	224(T)	36	326	7	32.60	72.93	n/c
113282021	RUS	ADD	89.1	V	SLAVYANSK NA KUBANI KRAS	224(T)	36	326	7	32.60	n/a	77.50
114090341	RUS	ADD	89.2	V	BESLAN S O	392(T)	36	95	25	32.40	n/a	69.68
084005462	TUR	REC	89.3	H	VAN	649(T),252(Z3)	36	150	37	25.80	76.95	n/c

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
084005414	TUR	REC	89.2	H	SINOP	427(T),419(Z3)	45	64	25	50.50
111056198	UKR	REC	89.3	V	SIMFEROPOL	472(T),336(Z3)	32	107	37	48.00
084005396	TUR	REC	89.4	H	RIZE	290(T),254(Z3)	30	348	25	43.00
109022071	RUS	REC	89.3	V	EISK KRAS	365(T)	26	161	37	36.90

Another detailed Analysis at 88.1MHz

SOCHI KRAS 88.1MHz - 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	88.1	SOCHI KRAS	039E4400	43N3600	-	36	V	D	64.56

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)
106051055	RUS	REC	88.1	V	GORIACHII KLIUCH	122(T)	36	338	37	73.80	73.63	85.51
112007911	RUS	REC	88.1	V	SLAVYANSK NA KUBANI KRAS	226(T)	36	326	37	62.50	80.25	n/c
107067128	RUS	REC	87.9	V	LAZAREVSKOE KRAS	48(T)	36	318	7	62.30	68.71	76.14
106000298	RUS	REC	88.3	V	LAZAREVSKOE	48(T)	36	318	7	62.30	72.06	77.78
112188888	RUS	REC	88.0	V	GELENDZHIK KRAS	169(T),26(Z3)	36	311	25	59.90	82.16	n/c
109061901	RUS	REC	88.1	V	KORENOVSK KRAS	209(T)	36	355	37	59.60	76.71	n/c
110004617	RUS	REC	88.2	V	BELORECHENSK KRAS	130(T)	36	5	25	53.10	70.97	n/c
108101879	RUS	REC	88.0	V	KURGANINSK KRAS	161(T)	36	25	25	49.80	78.52	n/c
114090338	RUS	ADD	88.0	V	TIKHORETSK KRAS	251(T)	36	8	25	46.40	n/a	77.09
112026494	UKR	REC	88.2	V	ALUSHTA	442(T),372(Z3)	34	287	25	46.20	79.41	n/c
107122807	RUS	REC	88.0	V	PIATIGORSK STAVR	272(T)	36	78	25	43.70	57.29	n/c
108119607	UKR	REC	88.0	V	SIMFEROPOL	472(T),336(Z3)	33	290	25	40.90	87.00	n/c
106051058	RUS	REC	88.4	V	GEORGIEVSKOE KRAS	73(T)	36	329	-7	38.90	71.47	n/c
111067794	UKR	REC	88.2	V	KRASNOHVARDIISKE	480(T),287(Z3)	33	298	25	37.90	77.77	n/c
100014334	RUS	REC	88.3	V	KRASNODAR	173(T)	36	341	7	37.00	59.36	n/c
108055023	RUS	REC	88.1	V	GUKHOI CHECH	481(T)	36	99	37	36.40	56.08	n/c
111018781	RUS	REC	88.0	V	SALSK ROST	352(T)	36	23	25	36.10	77.47	n/c
110113946	UKR	REC	88.1	V	KHERSON	652(T),289(Z3)	34	304	37	35.60	89.04	n/c
114090339	RUS	ADD	88.3	V	ANAPA KRAS	242(T),44(Z3)	36	308	7	34.50	n/a	76.80
110090787	UKR	REC	88.0	V	NOVOAZOVSK	412(T),33(Z3)	36	342	25	33.00	92.33	n/c
108025252	RUS	REC	88.1	V	KAMENSK SHAKHTINSKII ROST	525(T)	36	4	37	32.40	67.86	n/c
105203907	RUS	REC	88.2	V	ROSTOV NA DONU	402(T)	36	359	25	31.40	73.27	n/c
111010658	RUS	REC	88.1	V	CHECHCHEL YUKH CHECH	545(T)	36	95	37	30.50	81.85	n/c
109102843	UKR	REC	88.1	V	DNIPROPETROVSK	649(T),148(Z3)	36	328	37	30.10	76.31	n/c
112116270	RUS	REC	88.0	V	ALI IURT ING	417(T)	36	95	25	30.10	67.45	n/c
084005043	TUR	REC	88.2	H	AGRI	475(T),251(Z3)	36	150	25	29.40	64.57	n/c
084005213	TUR	REC	88.0	H	ERZINCAN	415(T),292(Z3)	26	187	25	27.30	64.51	n/c

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
109061901	RUS	REC	88.1	V	KORENOVSK KRAS	209(T)	25	174	37	51.90
106051055	RUS	REC	88.1	V	GORIACHII KLIUCH	122(T)	24	158	37	51.60
106000298	RUS	REC	88.3	V	LAZAREVSKOE	48(T)	24	137	7	46.30
112188888	RUS	REC	88.0	V	GELENDZHIK KRAS	169(T),26(Z3)	20	130	25	46.00
107067128	RUS	REC	87.9	V	LAZAREVSKOE KRAS	48(T)	24	137	7	44.90

Detailed Analysis at 88.1MHz interference to other emissions

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	88.1	SOCHI KRAS	039E4400	43N3600	-	36	V	D	64.56

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)
106051055	RUS	REC	88.1	V	GORIACHII KLIUCH	122(T)	36	338	37	73.80	73.63	85.51
112007911	RUS	REC	88.1	V	SLAVYANSK NA KUBANI KRAS	226(T)	36	326	37	62.50	80.25	n/c
107067128	RUS	REC	87.9	V	LAZAREVSKOE KRAS	48(T)	36	318	7	62.30	68.71	76.14
106000298	RUS	REC	88.3	V	LAZAREVSKOE	48(T)	36	318	7	62.30	72.06	77.78
112188888	RUS	REC	88.0	V	GELENDZHIK KRAS	169(T),26(Z3)	36	311	25	59.90	82.16	n/c
109061901	RUS	REC	88.1	V	KORENOVSK KRAS	209(T)	36	355	37	59.60	76.71	n/c
110004617	RUS	REC	88.2	V	BELORECHENSK KRAS	130(T)	36	5	25	53.10	70.97	n/c
108101879	RUS	REC	88.0	V	KURGANINSK KRAS	161(T)	36	25	25	49.80	78.52	n/c

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

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.

SOCHI KRAS 88.1MHz interference to other emissions

Site Name	Distances
GORIACHII KLIUCH	122(T)
SLAVYANSK NA KUBANI KRAS	226(T)
LAZAREVSKOE KRAS	48(T)
LAZAREVSKOE	48(T)
GELENDZHIK KRAS	169(T),26(Z3)
KORENOVSK KRAS	209(T)

Distance site to site & information concerning the various paths

Propagation zones According to Chapter 2 , No 2.1.1

- **T (Terre / Land)**
- **Z2 (Cold Sea)**
- **Z3 (Warm Sea)**
- **Z4 (Super-refractivity)**

SOCHI KRAS 88.1MHz interference to other emissions

Assign Freq (MHz)	Pol	Site Name	ERP (dBW)	Azim	PR (dB)	Nuisance FS (dBuV/m)	Eu Ref (dBuV/m)	Eu (dBuV/m)
88.1	V	GORIACHII KLIUCH	36	338	37	73.80	73.63	85.51
88.1	V	SLAVYANSK NA KUBANI KRAS	36	326	37	62.50	80.25	n/c
87.9	V	LAZAREVSKOE KRAS	36	318	7	62.30	68.71	76.14
88.3	V	LAZAREVSKOE	36	318	7	62.30	72.06	77.78
88.0	V	GELENDZHIK KRAS	36	311	25	59.90	82.16	n/c
88.1	V	KORENOVSK KRAS	36	355	37	59.60	76.71	n/c
88.2	V	BELORECHENSK KRAS	36	5	25	53.10	70.97	n/c
88.0	V	KURGANINSK KRAS	36	25	25	49.80	78.52	n/c
88.0	V	TIKHORETSK KRAS	36	8	25	46.40	n/a	77.09

ERP at pertinent Azimuth

Protection ratio (see Tables 2.1 to 2.3 of Annex 2 of Agrt) depending on:

- **Frequency spacing**
- **Transmission System**
- **Steady/tropospheric interference**

Propagation zones According to Chapter 2 , No 2.1.1

- **T (Terre / Land)**
- **Z2 (Cold Sea)**
- **Z3 (Warm Sea)**
- **Z4 (Super-refractivity)**

SOCHI KRAS 88.1MHz interference to other emissions

Assign Freq (MHz)	Pol	Site Name	ERP (dBW)	Azim	PR (dB)	Nuisance FS (dBuV/m)	Eu Ref (dBuV/m)	Eu (dBuV/m)
88.1	V	GORIACHII KLIUCH	36	338	37	73.80	73.63	85.51
88.1	V	SLAVYANSK NA KUBANI KRAS	36	326	37	62.50	80.25	n/c
87.9	V	LAZAREVSKOE KRAS	36	318	7	62.30	68.71	76.14
88.3	V	LAZAREVSKOE	36	318	7	62.30	72.06	77.78
88.0	V	GELENDZHIK KRAS	36	311	25	59.90	82.16	n/c
88.1	V	KORENOVSK KRAS	36	355	37	59.60	76.71	n/c
88.2	V	BELORECHENSK KRAS	36	5	25	53.10	70.97	n/c
88.0	V	KURGANINSK KRAS	36	25	25	49.80	78.52	n/c
88.0	V	TIKHORETSK KRAS	36	8	25	46.40	n/a	77.09

NFS = Fs received + PR

Eu Ref : Eu calculated at the time the assignment entered the Plan (n/a if not yet RECORDED)

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

SOCHI KRAS 88.1MHz interference from other emissions

Eu(dBuV/m)
64.56

For the application of the Article 4 procedure, the usable field strength is calculated by the simplified multiplication method

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
109061901	RUS	REC	88.1	V	KORENOVSK KRAS	209(T)	25	174	37	51.90
106051055	RUS	REC	88.1	V	GORIACHII KLIUCH	122(T)	24	158	37	51.60
106000298	RUS	REC	88.3	V	LAZAREVSKOE	48(T)	24	137	7	46.30
112188888	RUS	REC	88.0	V	GELENDZHIK KRAS	169(T),26(Z3)	20	130	25	46.00
107067128	RUS	REC	87.9	V	LAZAREVSKOE KRAS	48(T)	24	137	7	44.90
084005213	TUR	REC	88.0	H	ERZINCAN	415(T),292(Z3)	45	7	25	44.50
107122807	RUS	REC	88.0	V	PIATIGORSK STAVR	272(T)	35	261	25	42.70
108119607	UKR	REC	88.0	V	SIMFEROPOL	472(T),336(Z3)	37	107	25	41.50

Thank you for your attention

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