

الاتحاد الدولي للاتصالات



الحلقة الدراسية الإقليمية
للاتصالات الراديوية من أجل البلدان العربية

تونس العاصمة، تونس
13-9 ديسمبر 2013

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GE84PLN Software

Exercises

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GE84PLN - Planning VHF-FM sound broadcasting services under the GE84 Agreement

GE84PLN is a PC based application designed to assist administrations the planning of VHF-FM sound broadcasting services in accordance with the GE84 Agreement.

The program allows:

- Creating test notices
- Running compatibility analysis with respect to other assignments in the Plan
- Determining available frequencies for new services
- Creating TB2, TB3 and TB5 notices

It is recommended that the latest BRIFIC is installed so that characteristics of frequency assignments and proposed modifications are available.


The program is at present only available in English, French and Spanish.

Hardware requirements

Minimum installation requirements:

- Windows 2000, XP
- 64 MB RAM

Installation

Click the link below to download the latest version
[GE84PLN 1.6](#) (GE84PLN1.8 is in hospital for check-up)
[TERRABASEBETA.MDB](#) containing BC data from the latest BRIFIC
or
[How to run GE84PLN with the new BRIFIC DVD](#) 

Bug reports

For bug reports, comments or suggestions, please contact
brbcd@itu.int

Exercises at your own pace...

- Exercise document ([English - French](#))
- [Video](#) - Exercise 1 - Frequency Search
- [Video](#) - Exercise 2 - Create a electronic notice
- [Video](#) - Exercise 3 - Effective heights using SRTM3 terrain data

- You may need to install [Video Codec XviD-1.1.2-01112006](#)

Exercise 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.

Tunis

GE84PLN 1.6 - Information taken from BRIFC 2751 published on 20-08-2013 - Ad...

File Create electronic notices COORD Calculate Options Help Français Español

Ad: TUN Fragn: GE84

Click to select assianment(s) the

Notice	Intent	Ass Freq				
T01	RECORDED	99.4	BEN GUERDENE	011E13	33N08	
T01	RECORDED	102.9	BEN GUERDENE	011E13	33N08	
T01	RECORDED	106.5	BEN GUERDENE	011E13	33N08	
T01	RECORDED	95.8	BENI KHEDECHE	010E1118	33N1517	
T01	RECORDED	88.9	BENI KHIAR	010E471		
T01	RECORDED	88.7	BIADHA	009E140		
T01	RECORDED	91.8	BIADHA	009E140		
T01	RECORDED	95	BIADHA	009E140		
T01	RECORDED	98.3	BIADHA	009E140		
T01	RECORDED	101.8	BIADHA	009E140		
T01	RECORDED	105.4	BIADHA	009E140		
1A5	RECORDED	89.5	BIZERTE	009E570		
1A5	RECORDED	93.8	BIZERTE	009E570		
1A5	RECORDED	97	BIZERTE	009E5700	37N0600	
▶ 1A5	RECORDED	99.1	BIZERTE	009E5700	37N0600	
1A5	RECORDED	102.6	BIZERTE	009E5700	37N0600	
1A5	RECORDED	106.2	BIZERTE	009E5700	37N0600	
1A5	RECORDED	89.9	BORJ EL KHADRA	009E3300	30N1500	
1A5	RECORDED	93	BORJ EL KHADRA	009E3300	30N	
1A5	RECORDED	96.2	BORJ EL KHADRA	009E3300	30N	

Find available channels

BIZERTE

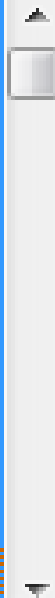


Select frequencies



Use Ctrl-click or Shift-click to select multiple frequencies

87.6
87.7
87.8
87.9
88.0
88.1
88.2
88.3
88.4



OK

Cancel

Channel Availability Analysis - GE84

Information taken from BRIFIC 2751 published on 20-08-2013

Administration TUN

Site name BIZERTE 009E5700 37N0600

System 4 Polarisation H

Assign Freq (MHz)	Max Nuisance Field	Interfering sources (Ctry/Freq/Dist/Nuisance field)
87.6	91 dBu	KEF EL AKHAL(ALG/87.6MHz/ 297km/78dBu),KEF ERRAND(TUN/87.6MHz/ 79km/91dBu),M ORTOBENE(I/87.6MHz/ 361km/63dBu),PALERMO(I/87.6MHz/ 320km/62dBu),PALMA M CHIARO(I/87.6MHz/ 339km/58dBu),ZARZIS(TUN/87.6MHz/ 407km/66dBu),TROZZA(TUN/87.7MHz/ 173km/64dBu)
87.7	79 dBu	KEF EL AKHAL(ALG/87.6MHz/ 297km/66dBu),KEF ERRAND(TUN/87.6MHz/ 79km/79dBu),PANTELLERIA(I/87.7MHz/ 180km/66dBu),TROZZA(TUN/87.7MHz/ 173km/65dBu),TROZZA(TUN/87.7MHz/ 173km/76dBu),GHARDIMAOU(TUN/87.8MHz/ 155km/68dBu),LA GALITE(TUN/87.8MHz/ 99km/72dBu),ZAGHOUAN(TUN/88.0MHz/ 82km/63dBu)
87.8	84 dBu	KEF ERRAND(TUN/87.6MHz/ 79km/60dBu),TROZZA(TUN/87.7MHz/ 173km/64dBu),CALTANISSETTA(I/87.8MHz/ 366km/59dBu),GHARDIMAOU(TUN/87.8MHz/ 156km/57dBu),GHARDIMAOU(TUN/87.8MHz/ 155km/80dBu),LA GALITE(TUN/87.8MHz/ 99km/84dBu),Y GOURAYA(ALG/87.8MHz/ 434km/65dBu),TEBESSA(ALG/87.9MHz/ 276km/61dBu),ZAGHOUAN(TUN/88.0MHz/ 82km/77dBu)

← 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)

The lowest

2

GE84PLN

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

Ad: **TUN** Fragn: **GE84** new used

- Run interference analysis
- Run analysis for other frequencies
- Find available channels

Click to select assignment(s) the

Notice	Intent	Ass Freq				
T01	RECORDED	99.4	BEN GUERDENE	011E13	33N08	
T01	RECORDED	102.9	BEN GUERDENE	011E13	33N08	
T01	RECORDED	106.5	BEN GUERDENE	011E13	33N08	
T01	RECORDED	95.8	BENI KHEDECHE	010E1118	33N1517	
T01	RECORDED	88.9	BENI KHIAR	010E4713	36N2851	
T01	RECORDED	88.7	BIADHA	009E1400	34N2600	
T01	RECORDED	91.8	BIADHA	009E1400	34N2600	
T01	RECORDED	95	BIADHA	009E1400	34N2600	
T01	RECORDED	98.3	BIADHA	009E1400	34N2600	
T01	RECORDED	101.8	BIADHA	009E1400	34N2600	
T01	RECORDED	105.4	BIADHA	009E1400	34N2600	
1A5	RECORDED	89.5	BIZERTE	009E5700	37N0600	
1A5	RECORDED	93.8	BIZERTE	009E5700	37N0600	
1A5	RECORDED	97	BIZERTE	009E5700	37N0600	
▶ 1A5	RECORDED	99.1	BIZERTE	009E5700	37N0600	
1A5	RECORDED	102.6	BIZERTE	009E5700	37N0600	
1A5	RECORDED	106.2	BIZERTE	009E5700	37N0600	
1A5	RECORDED	89.9	BORJ EL KHADRA	009E3300	30N1500	
1A5	RECORDED	93	BORJ EL KHADRA	009E3300	30N	
1A5	RECORDED	96.2	BORJ EL KHADRA	009E3300	30N	

Click twice

T01 - VHF Sound Broadcasting Station

T01

Save Changes
Save As a New Notice
New
Close

and Attenuation

Notification for Add Mod

T01

Adm Adm ID Callsign Station ID

For modifications: Identification of the assignment to be modified

Adm ID OR Assgn Freq (MHz) Longitude Latitude

Site characteristics

Transmitting antenna site name Geog Area Longitude Latitude Attitude asl (m)

Emission characteristics

Assgn Freq (MHz) BW (kHz) Tran Sys Polar ERP H (dBW) ERP V (dBW)

Antenna characteristics

Directivity Height above ground level (m) Maximum effective antenna height (m)

Article 11 (RR) only

Operating agency Address code Regular hours of operation (UTC) to Date of bringing into use

Coordination successfully completed with the following administrations

If you wish to use data from an existing assignment or notice, click on Retrieve data from BRIFIC.

Insert 87.7 and save as new

GE84PLN 1.6 - Information taken from BRIFIC 2751 published on 20-08-2013 - Ad...

File Create electronic notices COORD Calculate Options Help Français Español

Ad: TUN Fragn: GE84 new edit

Click to select assignment(s) the

	Notice	Intent	Ass Freq					total= 1
▶	T01	ADD	87.7	BIZERTE	009E5000	37ND600		4

Run interference analysis
Run analysis for other frequencies
Find available channels

Run interference analysis

Summary Results - GE84 Compatibility Analysis

Administration TUN

Assign ID	Adm	Intent	Assign Freq (MHz)	Site Name	Longitude	Latitude	ERP-H (dBW)	ERP-V (dBW)	Pol	ND/D	Eusable dBuV/m)
-	TUN	ADD	87.7	BIZERTE	009E5700	37N0600	37	-	H	D	87.99

(MHz)

- TUN ADD 87.7 BIZERTE 009E5700 37N0600 37 - H

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)
084025420	TUN	REC	87.8	H	LA GALITE	100(T),99(Z3)	31	298	25	74.10	92.80	94.06
111009755	TUN	ADD	87.6	H	KEF ERRAND	79(T),48(Z3)	31	112	25	73.10	n/a	84.97
084015298	I	REC	87.7	H	PANTELLERIA	181(T),128(Z3)	31	99	37	73.00	80.69	86.36
084015343	I	REC	87.7	H	BRUNCU PERDA B	265(T),213(Z3)	37	353	37	73.00	83.94	86.11
084015340	I	REC	87.7	H	ARBUS P.CUGNI	294(T),201(Z3)	37	336	37	68.70	79.94	82.23
084015256	I	REC	87.7	H	CINISI	299(T),285(Z3)	32	66	37	67.70	84.25	85.18
084025475	TUN	REC	87.7	H	TROZZA	173(T)	31	190	37	64.00	69.48	144.18
084012772	I	REC	87.6	M	MARSALA	235(T),212(Z3)	31	72	25	59.10	79.07	84.84
084015307	I	REC	87.8	H	S.VITO LO CAPO	271(T),270(Z3)	33	65	25	59.10	88.62	n/c
084014653	I	REC	87.7	H	M.PILUCCO	551(T),527(Z3)	37	30	37	57.90	84.32	n/c
084012653	I	REC	87.7	M	RAGUSA	425(T),355(Z3)	31	91	37	56.00	79.20	n/c
084012844	I	REC	87.6	M	LACONI	316(T),218(Z3)	37	346	25	55.10	104.45	n/c
104008274	TUN	REC	87.8	H	GHARDIMAOU	156(T)	31	243	25	54.10	108.37	n/c
084107272	TUN	REC	87.8	H	GHARDIMAOU	156(T)	31	241	25	54.00	82.05	n/c
084014884	I	REC	87.7	H	TRAMONTI	569(T),538(Z3)	34	44	37	53.90	84.13	n/c
104008419	TUN	REC	87.7	V	TROZZA	173(T)	31	191	37	53.90	155.38	n/c
084015388	I	REC	8			458(T),227(Z3)	37	355	37	52.90	83.48	n/c
084012592	I	REC	8			320(T),283(Z3)	32	68	25	52.50	78.36	n/c
084012451	I	REC	8			340(T),325(Z3)	31	88	25	51.70	75.58	n/c
084015023	I	REC	8			622(T),587(Z3)	34	56	37	51.60	86.25	n/c
084012113	I	REC	87.7	M	TEGGIANO	608(T),546(Z3)	34	51	37	50.90	82.19	n/c
084012308	I	REC	87.7	M	NICASTRO	594(T),564(Z3)	32	67	37	50.60	80.88	n/c
084012846	I	REC	87.6	M	M ORTOBENE	361(T),213(Z3)	37	352	25	49.80	79.29	n/c
084015107	I	REC	87.7	H	ACRI	621(T),561(Z3)	33	63	37	49.60	76.81	n/c
084015116	I	REC	87.7	H	S.GIOVAN.FIORE	637(T),588(Z3)	32	66	37	48.70	76.72	n/c

In Red:
>54

In Blue, <54

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

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.

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

Distances

225(T)

479(T),143(Z3)

395(T)

504(T),409(Z3)

472(T),336(Z3)

484(T),23(Z3)

← 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.