Jordan

FOCAL POINT REGARDING CORRESPONDENCE ON THIS QUESTIONNAIRE

(PARTS I, II AND III)

Please identify a focal point in your administration/organization who could provide a response to further correspondence regarding this questionnaire (see hereafter).

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3. Name of the Administration/Organization Jordan Telecom
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ITU-D Study Groups Secretariat

Telecommunication Development Bureau

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Attachment 1

QUESTIONNAIRE - PART I

(To be completed by both Administrations and, where relevant, by Sector members)

Information on national radio frequency spectrum allocations: 960 – 3 000 MHz

1. Introduction

A national table of frequency allocations is a basic tool for an effective spectrum management process. It provides a general plan for spectrum use and the basic structure to ensure efficient use of the spectrum and the prevention of radio frequency interference between services. Through use of the table, manufacturers will have a guide to where in the spectrum to design and build equipment, and users will know where to operate. As described in the National Spectrum Management Handbook, the International Table of Frequency Allocations, Article 5 of the Radio Regulations forms the basis for national tables and, in some countries, this may be used as the national table. However, other countries have included additional information on national use, varying in detail from showing which service operates when the Radio Regulations offer a choice, to showing how spectrum available for government and non-government use, and, for specific sub-bands, channel arrangements and equipment specifications in use. An extract of a national allocation table is attached as an example.

The scope of the information requested from administrations by this circular letter in no way touches the security or the secrecy aspects of frequency usage in Member States. It is intended simply to provide additional information on the frequency usage on a national basis, together with its corresponding application. It is intended also to facilitate the co-ordination requirements of that usage, either nationally or with neighbouring countries, or with other countries at an international level.

2. Information on national radio frequency spectrum allocations: 960 – 3 000 MHz

a) If you have a publicly available national table of radio frequency spectrum allocations, please submit a copy (either in electronic, or printed form, or both) of that table, or an extract for the frequency range 960 – 3 000 MHz.

b) If you do not have a national frequency allocations table available, the attached extract from Article 5 of the Radio Regulations may be used to indicate general information on how this range of frequencies is used by your administration within your national borders. Two "empty" columns have been added to this table for this purpose. If you are using an electronic version of the table, the information may be keyed into the spaces provided, otherwise, please type or write the information on a printed copy.

c) Administrations are invited to enter the following information:

In the column designated "National Allocations", please enter the name of the radiocommunications service that is allocated for the use of a given frequency band. Please use the ITU terminology given in Article 1 of the Radio Regulations to describe services, such as FIXED, MOBILE, space research, radio astronomy, etc., using

"capitals" to denote a PRIMARY allocation and "normal characters" to denote a secondary allocation (see Nos. **5.23** to **5.31**)

In the column designated "Application and comment", please enter further technical requirements or characteristics, if any, that have been established nationally for a given band such as channel spacing, limitations on radiated signal power;

d) Sector Members that operate in or manufacture equipment for this frequency range are invited to enter information about applications available for operation in the different frequency sub-bands e.g. purpose, operating parameters such as channel spacing, radiated signal power capabilities, etc.

e) Example extract from a national frequency allocation table

This example extract from a national allocation table shows the typical information administrations are invited to provide in the two columns under "National Use" for each sub-band. The column "National Allocation" shows which service(s) have been allocated the sub-band by the administration on a national basis. This is usually a sub-set of the international allocations. The second column shows the typical applications within the service, further comments on the application or any other application in the sub-band.

Allocation to services 960 – 3 100 MHz			National Use	
Region 1	Region 2	Region 3	National Allocation	Application & Comment
960-1 215	AERONAUTICAL RADIONAVIGATION 5328 5328A		AERONAUTICAL RADIONAVIGATION S5.328	Military and civil radionavigation; S6.328 refers. Used for DME/TACAN and military identification systems. Radioastronomy on 962-970 MHz - used for pulsars.
1 215-1 240	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5329 5329A SPACE RESEARCH (active) 5330 5331 5332		RADIOLOCATION RADIONAVIGATION-SATELLITE (s-->E) S5329, S5333	Military radiolocation including NAVSTAR GPS. Civil airport radars - 23cm band. Spaceborne radiolocation for Earth exploration - S6.333 refers

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
960-1 215	AERONAUTICAL RADIONAVIGATION 5.328 5.328A			
1 215-1 240	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332			
1 240-1 260	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A SPACE RESEARCH (active) Amateur 5.330 5.331 5.332 5.334 5.335			
1 260-1 300	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.334 5.335 5.335A			
1 300-1 350	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION SATELLITE (Earth-to-space) 5.149 5.337A			

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 350-1 400 FIXED MOBILE RADIOLOCATION 5.149 5.338 5.339	**1 350-1 400** RADIOLOCATION 5.149 5.334 5.339			
1 400-1 427	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341			
1 427-1 429	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341			
1 429-1 452 FIXED MOBILE except aeronautical mobile 5.341 5.342	**1 429-1 452** FIXED MOBILE 5.343 5.341			
1 452-1 492 FIXED MOBILE except aeronautical mobile BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.341 5.342	**1 452-1 492** FIXED MOBILE 5.343 BROADCASTING 5.345 5.347 BROADCASTING-SATELLITE 5.345 5.347 5.341 5.344			

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 492-1 525 FIXED MOBILE except aeronautical mobile 5.341 5.342	**1 492-1 525** FIXED MOBILE 5.343 MOBILE-SATELLITE (space-to-Earth) 5.348A 5.341 5.344 5.348	**1 492-1 525** FIXED MOBILE 5.341 5.348A		
1 525-1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	**1 525-1 530** SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	**1 525-1 530** SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.351A Earth exploration-satellite Mobile 5.349 5.341 5.351 5.352A 5.354		
1 530-1 535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	**1 530-1 535** SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354			
1 535-1 559	MOBILE-SATELLITE (space-to-Earth) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A			

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 559-1 610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.329A 5.341 5.362B 5.362C 5.363				
1 610-1 610.6 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	**1 610-1 610.6** MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.370 5.372	**1 610-1 610.6** MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372		
1 610.6-1 613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	**1 610.6-1 613.8** MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) 5.149 5.341 5.364 5.366 5.367 5.368 5.370 5.372	**1 610.6-1 613.8** MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372		

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 613.8-1 626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.341 5.355 5.359 5.363 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	**1 613.8-1 626.5** MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	**1 613.8-1 626.5** MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) Radiodetermination-satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.372		
1 626.5-1 660	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376			
1 660-1 660.5	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A			
1 660.5-1 668.4	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A			
1 668.4-1 670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.341			

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 670-1 675 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 5.380 5.341				
1 675-1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.341 5.377	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341		
1 690-1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space) 5.289 5.341 5.377 5.381	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341 5.381		

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
1 700-1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.289 5.341 5.377	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341 5.384		
1 710-1 930	FIXED MOBILE 5.380 5.384A 5.388A 5.149 5.341 5.385 5.386 5.387 5.388			
1 930-1 970 FIXED MOBILE 5.388A 5.388	**1 930-1 970** FIXED MOBILE 5.388A Mobile-satellite (Earth-to-space) 5.388	**1 930-1 970** FIXED MOBILE 5.388A 5.388		
1 970-1 980	FIXED MOBILE 5.388A 5.388			
1 980-2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F			
2 010-2 025 FIXED MOBILE 5.388A	**2 010-2 025** FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	**2 010-2 025** FIXED MOBILE 5.388A		

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
5.388	5.388 5.389C 5.389D 5.389E 5.390	5.388		
2 025-2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392			
2 110-2 120	FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (Earth-to-space) 5.388			
2 120-2 160 FIXED MOBILE 5.388A 5.388	**2 120-2 160** FIXED MOBILE 5.388A Mobile-satellite (space-to-Earth) 5.388	**2 120-2 160** FIXED MOBILE 5.388A 5.388		
2 160-2 170 FIXED MOBILE 5.388A 5.388 5.392A	**2 160-2 170** FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389D 5.389E 5.390	**2 160-2 170** FIXED MOBILE 5.388A 5.388		
2 170-2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F 5.392A			

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
2 200-2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392			
2 290-2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)			
2 300-2 450 FIXED MOBILE Amateur Radiolocation 5.150 5.282 5.395	**2 300-2 450** FIXED MOBILE RADIOLOCATION Amateur 5.150 5.282 5.393 5.394 5.396			
2 450-2 483.5 FIXED MOBILE Radiolocation 5.150 5.397	**2 450-2 483.5** FIXED MOBILE RADIOLOCATION 5.150 5.394			

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
2 483.5-2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A Radiolocation 5.150 5..371 5..397 5..398 5..399 5.400 5.402	**2 483.5-2 500** FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION-SATELLITE (space-to-Earth) 5..398 5.150 5.402	**2 483.5-2 500** FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION Radiodetermination-satellite (space-to-Earth) 5..398 5.150 5.400 5.402		
2 500-2 520 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403 5.405 5.407 5.412 5.414	**2 500-2 520** FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403 5.404 5.407 5.414 5.415A			
2 520-2 655 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	**2 520-2 655** FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416	**2 520-2 535** FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.403 5.415A		

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
5.339 5.403 5.405 5.412 5.418 5.418B 5.418C	5.339 5.403 5.418B 5.418C	**2 535-2 655** FIXED 5.409 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.418 5.418A 5.418B 5.418C		
2 655-2 670 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412 5.420	**2 655-2 670** FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.420	**2 655-2 670** FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.420		

Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Application & Comment**
2 670-2 690 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412 5.419 5.420	**2 670-2 690** FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.419 5.420	**2 670-2 690** FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.419 5.420 5.420A		
2 690-2 700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) **5.340** 5.421 5.422			
2 700-2 900	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424			

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Allocation to services 960 – 3 100 MHz			National Allocation	
Region 1	Region 2	Region 3	National Allocation	Application & Comment
2 900-3 100	RADIONAVIGATION 5.426 Radiolocation 5.425 5.427			

Attachment 2

QUESTIONNAIRE - PART II
(To be completed by Administrations only)

General Questions on National Spectrum Management

The following general questions on national spectrum management are based in part on the functional requirements of spectrum management described in the handbook on "National Spectrum Management". If you need additional space to answer the questions please continue on a separate sheet of paper.

1. What legal or regulatory texts govern your national spectrum management processes?
The Telecommunication Law no 13 & its amendments.

Are any actions planned to change these legal texts or regulations? YES__ NO__
To be answered by Telecommunication regulatory Comission (TRC).

2. Have you publicly available regulations and procedures for national spectrum management (e.g. radio services, license requirements etc.)? (YES) NO__
The Law no 13 in 91 & a License Agreement between Jordan Telecom & TRC

3. Do you have a national radio frequency spectrum allocation table? YES__ NO__
At TRC.

4. Regulations for the technical characteristics of radiocommunications equipment
Do you specify that the technical characteristics of radiocommunications equipment must comply with certain requirements (often referred to as "equipment standards"), for example to avoid interference to other services and users? YES__ NO__

a) Do you develop these technical requirements or equipment standards on a national basis or use those developed by other administrations or international/regional standards organisations: we use international standard equipment
National __Other __

b) Do you have a procedure to ensure that radiocommunications equipment complies with the technical requirements, for example:

Type Approval: ___; Manufacturers Declaration of Compliance: ___; Other ___

5. Spectrum re-deployment*

(The term "redeployment" is used here to refer to a process of national scope in which an assessment is conducted 1) to determine if portions of spectrum can be identified that are in limited use; and 2) to determine if such spectrum segments can be reallocated for use in delivering radiocommunication services that have expanding spectrum requirements. Some countries co-operate on a regional basis to identify suitable spectrum segments that may be re-deployed to facilitate the introduction of new applications on a harmonised basis.)*

a) Has there been any spectrum redeployment* in your country or has a need for spectrum redeployment been identified? YES__ NO__
Answered by TRC.

b) If so, do you have a method for achieving this redeployment in respective frequency bands and for given radiocommunication services? YES__ NO__
To be answered by TRC.

c) Please define the established method and describe the nature of the consultation, if any, with users regarding the potential costs resulting from the planned redeployment.

To be answered by TRC.

6. Spectrum management costs

a) What is the cost of providing national spectrum management functions in your country (if there is more than one organisation or agency responsible for spectrum management please give the total costs if this information is available)? _____(Swiss Francs)
To be answered by TRC.

b) What is the source of the funding required to accomplish these spectrum management functions?

To be answered by TRC.

7. Management of frequency assignment records.

a) Does your administration have a system (manual or computerized) to keep and maintain records of national frequency assignments and spectrum use (usually known as a Data Base Management System (DBMS))? YES__ NO__
We are planning to get the WinBASMS software.

b) Is there a single national DBMS or separate DBMS(s) for different users (for example a DBMS for assignments to government users and separate DBMS for assignments to non-government users)? Single__ Separate__
To be answered by TRC.

What is the approximate size (at 2002) of your DBMS:

c) number of frequency assignments _____

d) number of licences _____

e) Are these frequency assignment records made available to public? YES__ NO__

f) Is the DBMS computerized? YES__ NO__

g) What computerized DBMS do you use? _____

8. Co-ordination of frequency assignments with other countries:

- do you co-ordinate assignments to terrestrial stations YES__ NO__

- do you co-ordinate assignments to space stations YES__ NO__

To be answered by TRC.

9. Notification of frequency assignments.

Do you notify to the ITU those frequency assignments that are required to be notified by the Radio Regulations ? We notify TRC. YES__ NO__

If not, please explain why and list any difficulties: _____

10. Do you have a policy and planning function for national spectrum management (i.e. a national strategy for future use of the spectrum)? YES__ NO__
To be answered by TRC.

11. Do you perform technical analyses of frequency assignment requests? YES__ NO__
To be answered by TRC.

12 Do you perform radio monitoring of terrestrial radio services? YES __NO __
NO (to be answered by TRC).

Fixed monitoring stations

a) How many fixed monitoring stations do you have? non.

b) Please provide a brief list of the facilities available at your fixed monitoring stations (for example: receivers, spectrum analysers, direction finding equipment):

Jordan Telecom doesn't do monitoring.

c) What is the upper frequency limit of your fixed monitoring stations / MHz

d) What is the upper frequency limit of your fixed direction finding stations / MHz

Mobile monitoring stations

e) How many mobile monitoring stations do you have? /

f) Please provide a brief list of the facilities available in your mobile monitoring stations (for example: receivers, spectrum analysers, direction finding equipment)

/ (to be answered by TRC). JT doesn't do monitoring.

g) What is the upper frequency limit of your mobile monitoring stations / MHz

h) What is the upper frequency limit of your mobile direction finding stations _____ MHz

Transportable monitoring stations

i) How many transportable monitoring stations do you have? /

j) Please provide a brief list of the facilities available in your transportable monitoring stations (for example: receivers, spectrum analysers, direction finding equipment): /

_____

k) What is the upper frequency limit of your transportable monitoring stations / MHz

l) What is the upper frequency limit of your transportable direction finding stations / MHz

m) Do you perform space monitoring YES ___ NO ___

n) Please provide a brief list of the facilities available at your space monitoring stations

_____

o) What tasks does your space monitoring station perform for GSO satellite monitoring?

p) What tasks does your space monitoring station perform for non-GSO satellite monitoring?

q) Does your Administration participate in the International Monitoring Programme of ITU? YES ___ NO ___

r) Co-operation between Spectrum Management and Monitoring

Please indicate the amount of work (in percentages) performed by the monitoring service for:

s) Frequency Management Department _____%

t) Enforcement Department _____ %

u) License Department _____ %

13. Do you perform Inspections on Radio Stations YES__ NO__

a) What inspection techniques are used by your administration to determine that users of the spectrum are complying with national or international requirements?

_____

b) What are the administrative procedures that determine your inspection policy (for example the number of inspections, type of notification provided prior to inspection, rules and regulations)?

_____

c) What measurement equipment does your administration use to perform technical measurements at an inspection?

_____

d) What technical parameters does your administration measure when inspecting a radio system?

_____

e) What station records does your administration review when inspecting a radio station?

_____

14. Do you perform technical analyses of radio frequency interference complaints? To be answered by TRC. YES__ NO__

Do you have an established consultation process, involving Government and non-government organization, for resolving these complaints? YES__ NO__

15. Use of computers for national spectrum management

General

a) Do you use computers for national spectrum management? YES__ NO__
To be answered by TRC.

b) Type of computers _____
by TRC

c) How many workstations: _____ or personal computers (PCs): _____
by TRC

d) Operating system(s) _____
by TRC

e) Does your spectrum management system operate within a Local Area Network (LAN)? YES__ NO__
by TRC

f) Do you have access to the internet? YES__ NO__
by TRC

g) Does your administration provide a web site on the internet to disseminate spectrum management information? YES__ NO__
TRC

If yes, please provide the address (URL) of the web site: _____

Windows Basic Spectrum Management System (WinBASMS)

h) Are you aware that a Windows Basic Spectrum Management System is available from the ITU at no cost? Yes. (YES) NO__

i) Has your administration used WinBASMS? We have asked ~~the~~ ITU to use it. YES__ NO__

j) Has your administration had problems using WinBASMS? YES__ NO__
We will answer this question after using WinBASMS.

k) Please list all problems that were encountered using WinBASMS.

_____/_____

l) Would you recommend using WinBASMS if the problems identified in (d) have been corrected? / YES__ NO__

m) Do you need an enhanced spectrum management system if you answered no in (e)? / YES__ NO__

Advanced Automated Spectrum Management Systems (AASMS)

n) Does your administration use an Automated Spectrum Management Systems (AASMS) YES (NO)

o) Has your administration had problems using your AASMS YES__ NO__

p) Please list all problems that were encountered using your AASMS

_____

q) How would you propose to change the AASMS to correct or overcome these problems (please describe)? /

16. Organisation of spectrum management

a) Please describe your country's spectrum management structure and enclose a copy of the organization chart. The following aspects are of particular interest: To be answered by TRC.

b) Is the spectrum management organisation a separate ministry, department or agency reporting directly to the government or is it part of a larger government department (for example, a department responsible for all telecommunications)?
by TRC

c) Is the responsibility for spectrum management contained within a single organisation or is it shared between separate organisations (for example, some administrations have separate organisations for regulatory matters and policy matters, other administrations have separate organisations for government users and non-government users)?
by TRC

d) Have there been recent changes in this organisational structure or are changes planned (for example to take account of any changes in your government's policy for telecommunications)?
by TRC

e) Number of specialist staff in national spectrum management? _____
by TRC

f) Number of support staff in national spectrum management? _____

17. Do you use the ITU-R Handbooks and Reports on:

a) National Spectrum Management[1], version 1995 ?

b) Spectrum Monitoring, version 2002?

c) Computer-aided Techniques for Spectrum Management, version 1999?

d) Report SM.2012-1, Economic Aspects of Spectrum Management, version 2000?

18. Identification of problems experienced in national spectrum management.

Please use the following table to describe problems experienced by your administration in national spectrum management. This information will be used by the ITU, in particular ITU-R Study Group 1, to identify future areas of work, within the normal study programme, so that effort may be focused on the development of recommendations and reports for subjects where assistance is most needed.

[1] The National Spectrum Management Handbook is currently being updated. You are urged to contact Mr Robert Mayher, Chairman ITU-R Study Group 1 and the designated Rapporteur for revision of this Handbook if you have any comments that you wish included in this revision.

Question	Please describe the spectrum management problem associated with the Question and the type of assistance that could be provided by the ITU.
Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
Q7	
Q8	
Q9	
Q10	
Q11	
Q12	
Q13	
Q14	
Q15	
Q16	
Q17	

PART III

Attachment 3

QUESTIONNAIRE - PART III
(To be completed by administrations)
Information on the calculation of fees for frequency use

1 Introduction

ITU-D Question 21/2 (see Appendix 1), adopted by the World Telecommunication Development Conference (Istanbul, March 2002), aims to respond to one of the most pressing concerns of the majority of developing countries, particularly LDCs, which are experiencing difficulties in establishing a national frequency fee calculation model.

The Question was entrusted to the Joint Group on Resolution 9 (ITU-D Study Group 2 and ITU-R Study Group 1) in order to benefit from the experience it had acquired during the period 1998-2002 in mobilizing ITU-D and ITU-R expertise. It will lead *inter alia* to the establishment of a document structure bringing together the calculation formulas and frequency fee amounts applied by the countries for radiocommunication usages in the various frequency bands.

This questionnaire is thus being sent to administrations in order to collect the necessary data, which will be analysed in depth and reported on, with a view to the establishment by ITU of a database, to be accessible to all countries.

Generally speaking, Report ITU-R SM.2012-1, while it does not go into detail about the situation in each country, does describe several possible methods of administrative spectrum pricing and mentions the variables likely to be used to calculate frequency fees. It also considers the systems of assignment by public tender and of transferable rights to use the spectrum, in both of which frequency prices are set by the market.

Question 21/2 carries on from Report SM.2012-1, and the results of the work done under this Question will provide information on the real conditions in which frequency fees are implemented in all the countries that participated.

Administrations are therefore invited to answer this questionnaire as accurately as possible. However, the questionnaire has been designed to cover generally all possible cases. Your Administration is not necessarily required to reply to all questions but to mark applicable boxes. Should you find that there are other possible cases or other explanations, please do not hesitate to include them on a separate sheet with an appropriate cross-reference.

2 How to complete the questionnaire

The document contains questions that are to be found in both the body of the text and in the charts set out in APPENDIX 2, which concerns only frequency fees (the other charges are dealt with in question Q3).

In the charts, many of the questions require only a "yes" or "no" answer, and the questionnaire can serve as an aid to answering those questions. For the other questions, and when necessary, administrations are invited to write their replies on a separate document.

Additional explanations and a glossary intended to make it easier to answer the questions are given below.

The questionnaire was drawn up with a view to obtaining relatively specific replies that could be put to satisfactory use in the database. Numerous situations were envisaged and, as a rule, targeted questions drafted but, in spite of the questionnaire's length, it is quite likely that not all possible scenarios have been covered.

Administrations are therefore invited not only to respond to the questions asked, but also, as necessary, to describe any peculiarities of their system that the questionnaire does not cover. They are also invited to make any suggestions they consider pertinent to improve the content and the quality of the future database.

3 Questions

3.1 General questions

Q1

- Are there any legal texts on the establishment of frequency fees?

  Reply: To be answered by TRC.

- If yes, please indicate their references and the date on which they were last updated.

  Reply: To be answered by TRC.

Q2

- What procedure (regulatory, legislative, etc.) is used to review and update your system for setting frequency fees?

  Reply: To be answered by TRC.

- Are reviews conducted at pre-established regular intervals? If yes, please specify:

  Reply: To be answered by TRC.

- Does recourse to market mechanisms (auctions, calls for tenders) to screen applicants for spectrum access require that parliament enact legislation, that the government make a decision, or any other measure? Please specify.

  Reply: To be answered by TRC.

Q3

- Are the same approaches and principles used to set frequency fees for all users?

  Reply: To be answered by TRC.

- If yes, please complete the charts in APPENDIX 2.

- If no:

  – please indicate the methods used to calculate fees or the scales applied to agencies that use frequencies for non-commercial activities;

– then, please complete the charts in APPENDIX 2 for the agencies that use frequencies for commercial activities. To be answered by TRC.

Reply:

Q4

- In addition to direct frequency fees, certain administrations require the payment of additional spectrum-related charges (for example, for spectrum access, spectrum replanning, management of equipment using the frequencies).

  Does your Administration require such payments?

  Reply: To be answered by TRC.

- If yes, please specify:-

  – the users concerned;

  – the methods used to calculate the charges or the scales applied and the corresponding amounts.

  Reply: To be answered by TRC.

Q5

- To which institution(s) are the frequency fees and any additional charges collected paid?

  Reply: Frequency fees are paid to TRC.

3.2 Exemption from payment of frequency fees

Q6

- Are any applications partially or completely exempted from the payment of frequency fees?

  Reply: To be answered by TRC. معفى ومستثنى

- If yes, please specify:

  – the applications concerned;

  – their respective rate of exemption;

  – the method used to calculate the fees or the scale applied, if they differ from those indicated in rows 20 and 21 of the charts in APPENDIX 2.

  Reply: To be answered by TRC

Q7

- Are any users partially or wholly exempted from the payment of frequency fees?

  Reply: To be answered by TRC.

- If yes, please specify:

  – the users concerned;

  – their respective rate of exemption;

  – the method used to calculate the fees or the scale applied, if they differ from those indicated in rows 20 and 21 of the charts in APPENDIX 2.

  Reply: To be answered by TRC.

3.3 The application of frequency fees

Administrations are invited to respond to the questions asked in charts A to E in APPENDIX 2, dealing respectively with the fixed, mobile, satellite and broadcasting services and other applications.

The charts comprise:

– horizontally, three sections corresponding respectively:

  – [rows 1 to 21]: to the variables which may be used to set the fees and to the methods applied. This section contains shaded cells corresponding to non-relevant situations;

  – [row 22]: to the explanations, grounds and objectives;

  – [rows 23 to 25]: to recourse to market mechanisms, as the case may be;

  – vertically, the various applications relating to the service considered.

3.3.1 Approaches and principles for setting frequency fees

To answer this part of ITU-D Question 21/2, please complete rows 1 to 21 of the five charts (A to E) in APPENDIX 2.

In each chart, for any given application:

- for the variables, administrations should reply:

  – yes (by crossing out or deleting the letter "n") in the cells relating to the variables they use to set fees;

  – no (by crossing out or deleting the letter "y") in the cells relating to the variables they do not use;

- under "methods used" (rows 20 and 21), administrations should indicate, separately and depending on the case, the formulas or scales used to calculate the amount of the fees, preceded by the references indicated in the corresponding cells. Administrations are invited to explain the formulas and scales they use and how they are implemented.

Note: An administration concerned by a cell in row 20 in respect of one application will not be concerned by the corresponding cell in row 21 in respect of the same application, and vice versa.

Example 1 Take Chart A ("fixed service") and the application "Radio relays".

- To establish the corresponding fees, if the administration uses the variables "bandwidth", "centre frequency", "number of transmitting stations" and "duration of authorization/licence", it should reply "yes" in the cells situated at the intersection of rows 1, 2, 10 and 13 with the column "Radio relay". In all other cells in that column, it should reply "no".

- To determine the amount of the fees:

  – if the administration uses the following formula:
  "*Annual charge for a link = 100 x Δf/f*",
  where Δf = bandwidth and f = centre frequency,
  it could reply as follows:
  "*A1:*
  Annual charge for a link = 100 x Δf/f"

  – if the administration uses no formula, it should append the corresponding scale under reference *A7*.

3.3.2 Explanations, grounds and objectives (row 22 in the charts)

For each of the cells in row 22, administrations are invited to provide information on the grounds for their choice, for the variables used to set the fees and for the methods applied to determine the amount of those fees.

Example 2 Following on from example 1, the administration could reply as follows:

"A13:

– *the variable "bandwidth" was chosen to encourage economical use of the spectrum;*

– *the variable "centre frequency" was chosen to encourage the use of high frequencies;*

– *the variable "number of transmitting stations" was chosen to take account of spectrum and geographic occupancy;*

15A

– *the variable "duration of authorization" was chosen in order to enable collection of a global amount corresponding to the total length of time the spectrum is occupied. It also reduces the risk of frequency hoarding and non-use."*

3.3.3 Heading "Recourse to market mechanisms"

If the administration has had recourse to market mechanisms for a given application (for example, IMT-2000), it should specify whether it used auctions (row 23), calls for tenders (row 24) or comparative selection (beauty contests) (row 25). It should also indicate the total amount obtained and the total bandwidths auctioned off and allocated, respectively.

Note: An administration concerned by a cell in row 23 in respect of one application will not be concerned by the corresponding cell in rows 24 and 25 in respect of the same application, and vice versa.

3.3.4 Advantages and disadvantages of each approach

Q8

- What are the advantages and disadvantages of the approaches currently used by your Administration to establish the amount of frequency fees and any additional charges?

Reply: To be answered by TRC.

4 Updating the ITU report and database on frequency fees and additional charges

Q9

- How often would you consider it most appropriate to update the report and the database: every 2 years, 3 years, 4 years, ...?

Reply: To be answered by TRC.

- To that end, would your Administration be willing subsequently to complete a similar questionnaire at the regular interval it has indicated above?

Reply: We are ready to help according to our permitted authority.

5 Information concerning the questionnaire

France:

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PART III

APPENDICES

APPENDIX 1: Definition of ITU-D Question 21/2
APPENDIX 2: Charts to be completed (A to E)
APPENDIX 3: Glossary of terms used

Appendix 1

DEFINITION OF ITU-D QUESTION 21/2

Calculation of frequency fees

1 Statement of the situation or problem

The draft new Question dealt with here responds to one of the most pressing concerns of numerous developing countries, particularly LDCs, which are experiencing difficulties in elaborating a national frequency fee calculation model.

Furthermore, several regulatory frameworks place the frequency resource within the State domain. As a result, its use, which may well not be equitably distributed, must be properly remunerated as part of the rational management of public property. Techniques for sharing, segmentation, access to new frequencies and reorganization of the spectrum no longer suffice to guarantee effective management. The frequency spectrum therefore has to be optimized. This effort should, however, take into account the nature of the service to be provided, the band in question and the end user (consumer activities, etc.).

The optimization effort must be adapted to the new trends in the area of spectrum usage and sharing and must reflect the socioeconomic features of each country. It is particularly urgent when it comes to evaluating bands which are in high demand or may come to be so in the light of emerging technologies, as is the case with IMT-2000 systems in the 2 GHz band.

It should be borne in mind that the economic aspects of spectrum management are addressed in the ITU-D handbook on the economic, administrative and regulatory aspects of national spectrum management, as well as in Report ITU-R SM.2012, which describes, *inter alia*, the three main approaches to financing national spectrum management and the corresponding main advantages and disadvantages (financing from the national budget, through the collection of fees or charges for use of the spectrum, and by public tender). The report also presents the economic approaches used to promote national spectrum management (assignment through comparative assessment procedures; random assignment; assignment by public tender; transferable, flexible rights to use the spectrum; incentive pricing and concessionary charges, etc.).

Thus, the elaboration of a national frequency fee calculation model is a very complex matter and is the source of major difficulties for numerous developing countries and particularly LDCs for which the need is extremely urgent. The proposed Question will help to meet those concerns.

2 Question or issue proposed for study

The proposed study relates to the methods for calculating the various charges, fees, etc. that are levied on spectrum users. The points to be considered within the framework of this new Question are as follows:

a) Establishment in electronic format of a document structure bringing together the calculation formulas and frequency fee amounts applied by different countries for different radiocommunciation usages in the various frequency bands. This database will be made available to the ITU Member States and will require periodic updating.

b) Preparation of a report dealing with the following points:

• Analysis of the various methods, formulas and approaches currently applied by different countries for calculating frequency fees, accompanied by a comparative study clearly highlighting:

– approaches and principles relating to the calculation of frequency charges;

– the justifications and reasoning for each approach;

– how each approach contributes to fostering spectrum management and the effectiveness thereof;

– advantages and drawbacks of each approach (socioeconomic, technical and other considerations).

• Basic factors that may be taken into account when elaborating new formulas or reviewing existing ones.

• How to bring about consistency and complementarity between spectrum rearrangement processes and economic optimization of frequencies.

3 Expected outputs

An electronic document structure and links enabling users to have easy access to data on frequency fee calculation formulas for the users of the radio frequency spectrum in different countries. BDT is requested to coordinate participation with those countries who do not have access to the Web, providing them a hard copy upon request.

A report on the various frequency fee calculation formulas currently applied in different countries.

4 Required timing of the expected output

An initial version of the output is requested by mid-2003.

A regular update should subsequently be carried out.

5 Proposers/sponsors

This Question was submitted to WTDC-02 and has been recognized as being very important for the developing countries and LDCs, and as being urgent.

6 Source of required inputs

– Inputs are expected from spectrum managers (administrations, regulators), relating to:

– the structure of the information to be made available and the questionnaire(s) to be circulated to the Member States in order to gather the information to be entered into the database;

– analysis of the replies and of the report.

– Inputs are also expected from spectrum users (operators, etc.) that are subject to the fees in question, for analysis of the replies and of the report.

– Member States' replies to the questionnaire(s).

7 Target audience for the output

a) Indicate the target audience for the output in the following table:

	Developed countries	**Developing countries**	**LDCs**
Telecom policy makers	x	x	x
Telecom regulators	x	x	x
Service providers (operators)	x	x	-
Manufacturers	-	-	-

b) Target audience for the study - who specifically will use the output?

The output could be particularly useful to frequency spectrum managers when it comes to identifying the basic elements to be taken into account in elaborating a national frequency fee calculation model for the various users of the radio frequency spectrum in the different frequency bands.

c) Proposed methods for implementing the output

The output will be made available to all Member States free of charge (documents on paper, on the Web and on CD-ROM). An ITU circular letter should be sent out informing the Member States of the results of this study and inviting them to use that output when elaborating their national model for optimizing the frequency spectrum.

8 Proposed method of handling this Question

Given that this Question, which is very important and urgent for the developing countries and particularly LDCs, touches also on the field of radiocommunications, and that ITU-R Study Group 1 has already accumulated expert experience on the matter, it is proposed that it be dealt with by the **joint working group** already set up for the implementation of Resolution 9 (ITU-D Study Group 2/ITU-R Study Group 1).

Meetings dealing specifically with this Question should be programmed by the joint working group during the period 2002-2003.

9 Coordination requirements for the study

Coordination between ITU-D and ITU-R is required and should be carried out within the framework of the joint working group on Resolution 9.

In addition, coordination with ITU-D Study Group 1 is necessary (Question 12/1).

Appendix 2

Chart A: FIXED service

↓	→ APPLICATIONS VARIABLES	Row No.	Radio relay	Local radio loop (incl. LMDS, MMDS)	Links between fixed stations (incl. HF)	Local radio networks	Other application(s): please specify
Spectrum-related variables	bandwidth	1	y / n	y / n	y / n	y / n	y / n
	number of channels	1bis	y / n	y / n	y / n	y / n	y / n
	centre frequency, or band position in the spectrum	2	y / n	y / n	y / n	y / n	y / n
	exclusive / shared use	3	y / n	y / n	y / n	y / n	y / n
Variables relating to geographic coverage	surface area allocated	4	y / n	y / n	y / n		y / n
	distance between transmitter and receiver	5	y / n		y / n		y / n
Variables relating to equipment and infrastructure	transmitter power	6	y / n	y / n	y / n	y / n	y / n
	antenna height	7	y / n	y / n	y / n		y / n
	bit rate or capacity	8	y / n	y / n	y / n	y / n	y / n
	transmitting beam angle	9	y / n				y / n
	number of transmitting stations	10	y / n	y / n	y / n	y / n	y / n
	number of receiving stations	11	y / n	y / n	y / n	y / n	y / n
	degressivity	12	y / n	y / n	y / n	y / n	y / n
Socio-economic variables	duration of the authorization / licence	13	y / n	y / n	y / n	y / n	y / n
	population density	14		y / n	y / n	y / n	y / n
	total population covered	15		y / n			y / n
	geographic location	16	y / n	y / n	y / n	y / n	y / n
	operator's turnover	17		y / n	y / n		y / n
	Gross domestic product	18	y / n	y / n	y / n	y / n	y / n
Other variable(s): please specify		19	y / n	y / n	y / n	y / n	y / n

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Appendix 2

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Methods used	calculation formulas and corresponding amounts	20	A1	A2	A3	A4	A5
	scales	21	A6	A7	A8	A9	A10
Explanations and grounds, objectives		22	A11	A12	A13	A14	A15
Recourse to market mechanisms	auctions	23	A16	A17	A18	[redacted]	A20
	call for tenders	24	A21	A22	A23	[redacted]	A25
	comparative selection (beauty contests)	25	A26	A27	A28	[redacted]	A30

Appendix 2

CHART B: MOBILE service

⬇	➡ APPLICATIONS VARIABLES	Row No.	2G mobile systems	3G mobile systems	Radio-messaging	Private independent networks	Operated independent networks	Citizen band (CB)	RRI 446 (or family radio)	Other application(s): please specify
Spectrum-related variables	bandwidth	1	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	centre frequency, or band position in the spectrum	2	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	exclusive / shared use	3	y / n	y / n	y / n	y / n	y / n			y / n
Variables relating to geographic coverage	surface area allocated	4	y / n	y / n	y / n	y / n	y / n			y / n
	distance between transmitter and receiver	5				y / n	y / n			y / n
Variables relating to equipment and infrastructure	transmitter power	6				y / n	y / n	y / n	y / n	y / n
	antenna height	7				y / n	y / n	y / n		y / n
	bit rate or capacity	8	y / n	y / n		y / n	y / n			y / n
	transmitting beam angle	9								y / n
	number of transmitting stations	10	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	number of receiving stations	11	y / n	y / n	y / n	y / n	y / n			y / n
	degressivity	12	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
Socio-economic variables	duration of the authorization / licence	13	y / n	y / n	y / n	y / n	y / n	y / n		y / n
	population density	14	y / n	y / n	y / n	y / n	y / n			y / n
	total population covered	15	y / n	y / n	y / n	y / n	y / n			y / n
	geographic location	16	y / n	y / n	y / n	y / n	y / n			y / n
	operator's turnover	17	y / n	y / n	y / n		y / n			y / n
	Gross domestic product	18	y / n	y / n	y / n	y / n	y / n			y / n
Other variable(s): please specify		19	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n

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Appendix 2

Methods used	calculation formulas and corresponding amounts	20	B1	B2	B3	B4	B5	B6	B7	B8
	scales	21	B9	B10	B11	B12	B13	B14	B15	B16
Explanations and grounds, objectives		22	B17	B18	B19	B20	B21	B22	B23	B24
Recourse to market mechanisms	auctions	23	B25	B26	B27	B28	B29			B32
	call for tenders	24	B33	B34	B35	B36	B37			B40
	comparative selection (beauty contests)	25	B41	B42	B43	B44	B45			B48

Appendix 2

Chart C: SATELLITE service

⬇	➡ APPLICATIONS *VARIABLES*	Row No.	VSAT	Earth stations	Satellite video reporting	Mobile satellite service	Satellite radiolocation	Other application(s): please specify
Spectrum-related variables	bandwidth	1	y / n	y / n	y / n	y / n	y / n	y / n
	number of channels	1bis	y / n	y / n	y / n	y / n	y / n	y / n
	centre frequency, or band position in the spectrum	2	y / n	y / n	y / n	y / n	y / n	y / n
	exclusive / shared use	3	y / n	y / n	y / n	y / n	y / n	y / n
Variables relating to geographic coverage	surface area allocated	4			y / n	y / n	y / n	y / n
	distance between transmitter and receiver	5						y / n
Variables relating to equipment and infrastructure	transmitter power	6	y / n	y / n	y / n			y / n
	antenna diameter	7	y / n	y / n	y / n			y / n
	bit rate or capacity	8	y / n	y / n	y / n	y / n	y / n	y / n
	transmitting beam angle	9	y / n	y / n	y / n			y / n
	number of transmitting stations	10	y / n	y / n	y / n	y / n		y / n
	number of receiving stations	11	y / n	y / n		y / n	y / n	y / n
	degressivity	12	y / n	y / n	y / n	y / n	y / n	y / n
Socio-economic variables	duration of authorization / licence	13	y / n	y / n	y / n	y / n	y / n	y / n
	population density	14	y / n	y / n	y / n	y / n	y / n	y / n
	total population covered	15				y / n	y / n	y / n
	geographic location	16	y / n	y / n	y / n	y / n	y / n	y / n
	operator's turnover	17	y / n	y / n	y / n	y / n	y / n	y / n
	Gross domestic product	18	y / n	y / n	y / n	y / n	y / n.	y / n
Other variable(s): please specify		19	y / n	y / n	y / n	y / n	y / n	y / n

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Appendix 2

Methods used	calculation formulas and corresponding amounts	20	C1	C2	C3	C4	C5	C6
	scales	21	C7	C8	C9	C10	C11	C12
Explanations and grounds, objectives		22	C13	C14	C15	C16	C17	C18
Recourse to market mechanisms	auctions	23	C19	C20	C21	C22	C23	C24
	call for tenders	24	C25	C26	C27	C28	C29	C30
	comparative selection (beauty contests)	25	C31	C32	C33	C34	C35	C36

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Appendix 2

Chart D: BROADCASTING service

⬇ VARIABLES	➡ APPLICATIONS	Row No.	Sound broadcasting				Television broadcasting			
			Earth		Satellite		Earth		Satellite	
			Analogue	Digital	Analogue	Digital	Analogue	Digital	Analogue	Digital
Spectrum-related variables	bandwidth	1	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	centre frequency, or band position in the spectrum	2	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	exclusive / shared use	3	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
Variables relating to geographic coverage	surface area allocated	4	y / n	y / n			y / n	y / n		
	distance between transmitter and receiver	5								
Variables relating to equipment and infrastructure	transmitter power	6	y / n	y / n			y / n	y / n		
	antenna height	7	y / n	y / n			y / n	y / n		
	bit rate or capacity	8	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	transmitting beam angle	9								
	number of transmitting stations	10	y / n	y / n			y / n	y / n		
	number of receiving stations	11	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	degressivity	12	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
Socio-economic variables	duration of authorization / licence	13	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	population density	14	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	total population covered	15	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	geographic location	16	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	operator's turnover	17	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	Gross domestic product	18	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n
Other variable(s): please specify		19	y / n	y / n	y / n	y / n	y / n	y / n	y / n	y / n

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Appendix 2

Methods used	calculation formulas and corresponding amounts	20	D1	D2	D3	D4	D5	D6	D7	D8
	scales	21	D9	D10	D11	D12	D13	D14	D15	D16
Explanations and grounds, objectives		22	D17	D18	D19	D20	D21	D22	D23	D24
Recourse to market mechanisms	auctions	23	D25	D26	D27	D28	D29	D30	D31	D32
	call for tenders	24	D33	D34	D35	D36	D37	D38	D39	D40
	comparative selection (beauty contests)	25	D41	D42	D43	D44	D45	D46	D47	D48

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Appendix 2

Chart E: other applications

⬇	➡ APPLICATIONS *VARIABLES*	Row No.	Radio amateur	Experimental networks	Low-range, low-power devices	Radio-navigation	Radio-location	Weather service	Other application(s): please specify
Spectrum-related variables	bandwidth	1	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	centre frequency, or band position in the spectrum	2	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	exclusive / shared use	3		y / n		y / n	y / n	y / n	y / n
Variables relating to geographic coverage	surface area allocated	4		y / n		y / n	y / n	y / n	y / n
	distance between transmitter and receiver	5		y / n					y / n
Variables relating to equipment and infrastructure	transmitter power	6	y / n	y / n	y / n	y / n			y / n
	antenna height	7	y / n	y / n					y / n
	bit rate or capacity	8		y / n	y / n	y / n	y / n	y / n	y / n
	transmitting beam angle	9		y / n		y / n		y / n	y / n
	number of transmitting stations	10	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	number of receiving stations	11	y / n	y / n	y / n		y / n		y / n
	degressivity	12	y / n		y / n	y / n	y / n	y / n	y / n
Socio-economic variables	duration of authorization / licence	13	y / n	y / n	y / n	y / n	y / n	y / n	y / n
	population density	14							y / n
	total population covered	15							y / n
	geographic location	16							y / n
	operator's turnover	17			y / n	y / n	y / n	y / n	y / n
	Gross domestic product	18							y / n
Other variable(s): please specify		19	y / n	y / n	y / n	y / n	y / n	y / n	y / n

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Appendix 2

Methods used	calculation formulas and corresponding amounts	20	E1	E2	E3	E4	E5	E6	E7
	Scales	21	E8	E9	E10	E11	E12	E13	E14
Explanations and grounds, objectives		22	E15	E16	E17	E18	E19	E20	E21
Recourse to market mechanisms	auctions	23	[redacted]			E25	E26	E27	E28
	call for tenders	24				E31	E32	E33	E34
	comparative selection (beauty contests)	25				E38	E39	E40	E41

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Appendix 3

GLOSSARY

Term	Meaning
Exclusive/shared use	The utilization of a frequency band is "exclusive" when the beneficiary of the authorization is the only one to use that band. If several users utilize the same band, utilization is "shared".
Surface area allocated	Area within which the beneficiary of the authorization is authorized to use the frequency/frequencies allocated to it. Example: the surface area allocated may be the entire national territory or only a part thereof.
Degressivity	An organization that uses *n* units of equipment (or *n* frequencies) benefits from "degressivity" in the fees due when the total fees it has to pay in respect of the *n* units of equipment (or *n* frequencies) is less than the product of: [*n*] x [amount of the fees relating to one unit of equipment (or to one frequency)].
Duration of authorization/licence	The period during which the beneficiary of the authorization is authorized to use the frequency/frequencies it has been allocated. Example: generally speaking, authorizations are valid for several years, although temporary authorizations, covering a period of months or less, may also be granted.
Population density	Density relative to surface area allocated.
Population covered	Number of inhabitants in the surface area allocated.
Operator's turnover	For a given application, generally the annual turnover obtained by the operator from the frequencies it has been allocated for that application. Example: annual turnover obtained by a 2G mobile service operator.
Gross domestic product (GDP)	GDP of the economic agents (State, firms and households) within the surface area allocated. The higher the GDP, the greater the potential turnover obtained from the commercial use of frequencies in the surface area allocated is likely to be.
Geographic location	Location of the surface area allocated within the national territory. To take an extreme example, in a given country, the turnover that can potentially be derived from the commercial use of frequencies in and around the economic capital is greater than that which could be obtained in a desert area.
Management costs	The costs borne by the body managing the authorization granted for use of the frequencies. In some countries, fees are broken down into frequency fees and management fees.
Additional charges	These are charges (for spectrum access, spectrum replanning, management, etc.) relating to spectrum occupancy only.
Auctions	In an auction, once the applicants have qualified, the price they bid (which corresponds to the fees for spectrum access and use of the frequencies) is the only criteria used in their selection.
Call for tenders	In bidding of this kind, the applicants' price bid (which corresponds to the fees for spectrum access and use of the frequencies) is just one of several selection criteria used (see below).
Comparative selection (beauty contest)	In bidding of this kind, the applicants are screened on the basis of various possible criteria (but not price), such as aptitudes and capacities, technical and business plans, proposed tariffs, commitment to covering the territory, availability and quality of service, etc. Where spectrum access and frequency use are subject to a fee, the amount of that fee is not open to bidding by the applicants but rather imposed by the authorities.

rec_no	tx_name	tx_e1	tx_e2	tx_e3	tx_n1	tx_n2	tx_n3	tx_hi	borj_hi	ass_freq	tx_band_mbil	tx_band_mhz	serv_type	tran_OP_mw	tran_OP_dbm	type	gain	polar	hawa_dir	hawa_hi	rec_name	rec_e1	rec_e2	rec_e3	rec_n1	rec_n2	rec_n3	proj_name	serv_date	record_date	Commets
	VHF Network cancelled																														
	VHF Network cancelled																														
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	VHF Network cancelled																														
619	All area									450.65		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
620	All area									450.675		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
621	All area									450.7		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
622	All area									450.725		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
623	All area									450.75		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
624	All area									450.775		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
625	All area									450.8		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
626	All area									450.825		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
627	All area									450.85		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
628	All area									450.875		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
638	All area									460.05		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
637	All area									460.075		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
636	All area									460.1		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
635	All area									460.125		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
634	All area									460.2		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
632	All area									460.225		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
633	All area									460.25		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
631	All area									460.275		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
630	All area									460.3		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
629	All area									460.325		0.025	TP	10000		YAGI	5	V			All area							DUAL. CH			H & V Both
776	NAQAB REST HC	50	59	29	8	29	35	1118	9	1428.75		3.5	TP		34	GRID ANT 1.	26.5	H	177	8	DISEH	16	39	29	16	30	35	Alreef SR-500		9/8/1999	
309	Alreshah	42	13	30	26	13	35	280	65	1428.75	4.864	3.5	TP		35	Parabolic2.4n	29	V	192	61	Rahmah	47	54	29	41	8	35	Reef Tlecom		9/5/1999	
322	Beir Aldbaghat	50	25	30	34	30	35	1600	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	67	8	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
325	Almazare'	49	26	30	45	36	35	1315	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	266	8	ir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
327	Mdabe'a	9	29	30	55	37	35	1257	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	240	8	r Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
329	Almanshieh / Ma'a	35	23	30	34	36	35	1300	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	311	8	eir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
331	Almuhammadiyah	44	25	30	6	45	35	1080	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	274.5	8	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
333	Alhashemiyah	30	31	30	24	47	35	1060	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	249	8	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
335	Alhusiniyah	43	35	30	50	47	35	1060	16	1432.25	4.864	3.5	TP		35	Parabolic (1.2	23	V	235	16	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
337	Alfujij	59	31	30	43	35	35	1280	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	214	8	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
339	Hawalah	52	27	30	57	30	35	1500	8	1432.25	4.864	3.5	TP		35	PANEL	17.5	V	133	8	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
701	Manjah	0	44	31	11	5	35	802	8	1432.25		3.5	TP		36	Pannel	15.7	V	91	7	Eljiza AR	8	42	35	19	57	39	Alreef Project		9/1/1999	
702	Amaiba / East	57	38	31	35	59	35	750	8	1432.25		3.5	TP		36	Pannel	12.7	V	57	7	Eljiza AR	8	42	33	19	57	37	Alreef Project		9/1/1999	
703	Um Qsair	0	40	31	33	5	35	750	8	1432.25		3.5	TP		36	Pannel	12.7	V	57	7	Eljiza AR	8	42	36	19	57	40	Alreef Project		9/1/1999	
704	Altalaq	63	3	31	0	0	36	740	8	1432.25		3.5	TP		36	Grid	15.2	V	337	7	Eljiza AR	8	42	32	19	57	36	Alreef Project		9/1/1999	
705	Hammamat Alshar	58	3	31	29	5	35	740	8	1432.25		3.5	TP		36	Pannel	15.7	V	304	7	Eljiza AR	8	42	34	19	57	38	Alreef Project		9/1/1999	
706	Alqunitrah	1	4	31	33	0	36	710	8	1432.25		3.5	TP		36	Pannel	15.7	V	289	7	Eljiza AR	8	42	31	19	57	35	Alreef Project		9/1/1999	
761	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	1432.25		3.5	TP		34	GRID 0.9	17	V	211	37	POLICE REST	35	26	29	7	58	34	Alreef SR-500		9/8/1999	
760	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	1432.25		3.5	TP		34	GRID 2.4	31	H	47	37	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
712	lub	62	3	31	53	4	35	680	8	1435.75		3.5	TP		36	Pannel		V	340	7	Ma'een AR	0	41	35	20	43	39	Alreef Project		9/1/1999	
713	Ameleh	25	35	31	25	56	35	680	20	1435.75		3.5	TP		36	Pannel	15.6	V	325	7	Ma'een AR	0	41	33	20	43	37	Alreef Project		9/1/1999	
714	Aljameel	50	28	31	40	53	35	730	30	1435.75		3.5	TP		36	Grid	21.2	V	324	7	Ma'een AR	0	41	31	20	43	35	Alreef Project		9/1/1999	
715	Atrooz	53	3	31	4	40	35	740	8	1435.75		3.5	TP		36	Pannel	15.1	V	200	7	Ma'een AR	0	41	34	20	43	38	Alreef Project		9/1/1999	
716	Qahqaha	22	3	31	5	50	35	705	8	1435.75		3.5	TP		36	Pannel	12.1	V	133	7	Ma'een AR	0	41	36	20	43	40	Alreef Project		9/1/1999	
717	Toar Alnashash	33	3	31	4	50	35	670	8	1435.75		3.5	TP		36	Pannel	15.7	V	136	7	Ma'een AR	0	41	37	20	43	41	Alreef Project		9/1/1999	
718	um Ashajara	31	35	31	4	40	35	710	8	1435.75		3.5	TP		36	Pannel	12.2	V	138	7	Ma'een AR	0	41	38	20	43	42	Alreef Project		9/1/1999	
719	Almanshieh / Mad	13	4	31	15	4	35	850	8	1435.75		3.5	TP		36	Pannel	15.9	V	120	7	Ma'een AR	0	41	32	20	43	36	Alreef Project		9/1/1999	
274	Baten Alghol	36	44	29	17	50	35	1240	65	1435.75	4.864	3.5	TP		35	Parabolic (1.8	26	H	312	55	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
276	Waheida	9	8	29	30	34	35	1323	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	200	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
278	Mraighah	27	5	30	15	31	35	1380	8	1435.75	4.864	3.5	TP		35	Parabolic (0.9	21	V	183	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
280	Alfardakh	16	11	30	42	30	35	1475	8	1435.75	4.864	3.5	TP		35	Parabolic 1.2	23	V	179	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
282	Abu Elesen	20	2	30	59	29	35	1480	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	162	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
284	Swemarah	1	5	30	48	29	35	1430	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	169	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
286	Tasan	30	3	30	9	28	35	1530	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	147	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
288	Alsadaqah	52	9	30	47	29	35	1500	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	174	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
290	Qreen	47	5	30	23	28	35	1500	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	160	8	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
292	Alqasmah	0	4	30	31	29	35	1475	8	1435.75	4.864	3.5	TP		35	PANEL	17.5	V	164	8	NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
348	Ma'an	48	11	30	4	44	35	1100	52.5	1439.25	4.864	3.5	TP		35	Sectoral(90de	16	V	318	35	danah	16	15	30	9	32	35	Reef Tlecom		9/5/1999	
350	Ma'an	48	11	30	4	44	35	1100	52.5	1439.25	4.864	3.5	TP		35	Sectoral(90de	16	V	318	35	Adrouh	37	19	30	59	35	35	Reef Tlecom		9/5/1999	
346	Ma'an	48	11	30	4	44	35	1100	52.5	1439.25	4.864	3.5	TP		35	Sectoral(90de	16	V	318	35	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
319	Ma'an	48	11	30	4	44	35	1100	52.5	1439.25	4.864	3.5	TP		35	Sectoral(90de	16	V	318	35	Ayl	22	12	30	18	32	35	Reef Tlecom		9/5/1999	
321	Ma'an	48	11	30	4	44	35	1100	52.5	1439.25	4.864	3.5	TP		35	Sectoral(90de	16	V	318	35	Basta	24	13	30	17	32	35	Reef Tlecom		9/5/1999	
312	Qoraiqerah	44	37	30	5	24	35	110	16	1439.25	4.864	3.5	TP		35	Parabolic 1.8	26	V	208	16	Beir madkoor	51	26	30	18	17	35	Reef Tlecom		9/5/1999	
777	MNESHEER	13	35	29	6	34	35	810	9	1439.25		3.5	TP		34	PANEL ANT	18	H	321	8	DISEH	16	39	29	16	30	35	Alreef SR-500		9/8/1999	
778	TWAISEH	0	30	29	0	50	35	810	9	1439.25		3.5	TP		34	PANEL ANT	18	H	357	8	DISEH	16	39	29	16	30	35	Reef SR-500		9/8/1999	
764	DIVING CENTER	58	23	29	5	58	34	17	9	1439.25		3.5	TP		34	GRID ANT 0.	17	V	1	7	POLICE REST	35	26	29	7	58	34	Reef SR-500		9/8/1999	
310	Qatar	59	48	29	13	5	35	60	8	1439.25	4.864	3.5	TP		35	PANEL	17.5	V	27	8	Rahmah	47	54	29	41	8	35	Reef Tlecom		9/5/1999	
271	Almdawwarah Alb	25	19	29	36	1	36	720	40	1442.75	4.864	3.5	TP		35	Sectoral(180	13	V	280	8	Almdawwarah / Alhudood	22	4	29	22	4	36	Reef Tlecom		9/5/1999	
302	Alrajuf	28	10	30	29	25	35	1600	16	1442.75	4.864	3.5	TP		35	Parabolic0.9n	21	V	26	16	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
305	Qa'	41	16	30	38	32	35	1420	8	1442.75	4.864	3.5	TP		35	PANEL	17.5	H	338	8	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
315	Jarba	20	22	30	2	36	35	1290	8	1442.75	4.864	3.5	TP		35	PANEL	17.5	V	244	8	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
317	Alreshah	42	13	30	26	13	35	280	65	1442.75	4.864	3.5	TP		35	Parabolic 1.8	26	V	66.6	61	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
340	Beir Khdad	34	26	30	38	32	35	1567	52.5	1442.75	4.864	3.5	TP		35	Parabolic (2.4	29	V	192	25	Alqle'ah	13	20	30	58	30	35	Reef Tlecom		9/5/1999	
762	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	1442.75		3.5	TP		34	GRID 0.9	17	V	216	19	AQABA	46	31	29	18	0	35	Alreef SR-500		9/8/1999	
676	Madaba	18	43	31	43	47	35	810	45	1442.75		3.5	TP		36	Pannel	12.2	V	235	16	Ma'an	51	11	30	7	44	35	Alreef Project		9/1/1999	
692	Alraman	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	355	15	Abu - Hlailefa	20	3	31	3	53	35	Alreef Project		9/1/1999	
693	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	346	15	Al Rmail	30	3	31	20	5	35	Alreef Project		9/1/1999	
697	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	61	15	Almastaba	9	12	31	5	58	35	Alreef Project		9/1/1999	
695	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	52	15	Khan Alzabib	0	32	31	24	0	35	Alreef Project		9/1/1999	
694	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	340	15	Ma'an	52	11	30	8	44	35	Alreef Project		9/1/1999	
296	Ma'an	48	11	30	4	44	35	1100	52.5	1446.25	4.864	3.5	TP		35	Parabolic 1.8	26	V	223	9	RAS NAQAB	44	59	29	57	30	35	Reef Tlecom		9/5/1999	
698	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	80	15	Saleia	2	27	32	0	31	35	Alreef Project		9/1/1999	
696	Alramah	27	0	31	42	5	35	759	17	1446.25		3.5	TP		36	Sectoral 90	0.2	V	13	15	um Alrasas	29	0	31	50	5	35	Alreef Project		9/1/1999	
306	Alrajuf	28	10	30	29	25	35	1600	16	1449.75	4.864	3.5	TP		35	PANEL	17.5	H	10	6	Albida	34	23	30	56	28	35	Reef Tlecom		9/5/1999	
671	Madaba	18	43	31	43	47	35	810	45	1449.75		3.5	TP		36	Sectoral 120	5.3	V	259	40	Alfaiha'a	25	4	31	42	4	35	Alreef Project		9/1/1999	
294	Almdawwarah Alb	25	19	29	36	1	36	720	40	1449.75	4.864	3.5	TP		35	Parabolic2.4	29	V	338	25	Baten Alghol	36	44	29	17	50	35	Reef Tlecom		9/5/1999	
301	Alrajuf	28	10	30	29	25	35	1600	16	1449.75	4.864	3.5	TP		35	Parabolic 1.8	26	V	336.7	12.5	Bier Khdad	36	26	30	38	32	35	Reef Tlecom		9/5/1999	
673	Madaba	18	43	31	43	47	35	810	45	1449.75		3.5	TP		36	Sectoral 120	5.3	V	156	40	Dalilat Almterat	38	3	31	49	4	35	Alreef Project		9/1/1999	
670	Madaba	18	43	31	43	47	35	810	45	1449.75		3.5	TP		36	Sectoral 120	5.3	V	98	40	EL Jiza	8	42	31	19	57	35	Alreef Project		9/1/1999	
672	Madaba	18	43	31	43	47	35	810	43	1449.75		3.5	TP		36	Sectoral 120	5.3	V	12	40	Grainah	54	4	31	57	4	35	Alreef Project		9/1/1999	
674	Madaba	18	43	31	43	47	35	810	45	1449.75		3.5	TP		36	Sectoral 120	5.3	V	119	40	Hawarah	13	4	31	4	50	35	Alreef Project		9/1/1999	
763	DIVING CENTER	58	23	29	5	58	34	17	9	1449.75		3.5	TP		34	60 DEG SEC	17	V	50	8.5	LORRIES PARKING	44	26	29	52	1	35	Alreef SR-500		9/8/1999	
669	Madaba	18	43	31	43	47	35	810	45	1449.75		3.5	TP		36	Sectoral 120	5.3	V	138	40	Natel	9	30	31	14	5	35	Alreef Project		9/1/1999	

Spectrum used in JT (Jordan Telecom)
in the range 960 MHZ → 3000 MHZ

⇒ Continued

rec_no	tx_name	tx_e1	tx_e2	tx_e3	tx_n1	tx_n2	tx_n3	tx_hi	borj_hi	ass_freq	tx_band_mbit	tx_band_mhz	serv_type	tran_OP_mw	tran_OP_dbm	type	gain	polar	hawa_dir	hawa_hi	rec_name	rec_e1	rec_e2	rec_e3	rec_n1	rec_n2	rec_n3	proj_name	serv_date	record_date	Commets
771	Dabat Hanoot	8	59	29	34	27	35	1180	9	1449.75		3.5	TP		34	PANEL ANT	18	H	61	8	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
772	Hamaimeh	9	54	29	24	24	35	956	9	1449.75		3.5	TP		34	PANEL ANT	18	H	45	8	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
773	SALHIYYEH	48	41	29	57	22	35	790	9	1449.75		3.5	TP		34	PANEL ANT	18	H	21	8	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
774	NAQAB REST HC	50	59	29	8	29	35	1118	9	1449.75		3.5	TP		34	PANEL ANT	18	H	93	6	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
775	RAM	30	34	29	11	25	35	960	9	1449.75		3.5	TP		34	PANEL ANT	18	H	11	18	RAS NAQAB	44	59	29	57	30	35	Alreef SR-500		9/8/1999	
308	Rahmah	47	54	29	41	8	35	190	18	1477.75	4 864	3.5	TP		35	Parabolic 1.8	26	V	12	17	Alreshah	42	13	30	26	13	35	Reef Tlecom		9/5/1999	
781	DISEH	16	39	29	16	30	35	810	17	1477.75		3.5	TP		34	GRID ANT 1.2	26.5	H	357	14	NAQAB REST HOUSE	50	59	29	8	29	35	Alreef SR-500		9/8/1999	
336	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Aftaijj	59	31	30	43	36	35	Reef Tlecom		9/5/1999	
332	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Alhashemiyah	30	31	30	24	34	35	Reef Tlecom		9/5/1999	
334	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Alhusiniyah	43	35	30	50	47	35	Reef Tlecom		9/5/1999	
328	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Almanshieh / Ma'an	35	23	30	34	36	35	Reef Tlecom		9/5/1999	
324	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Almazare'	49	26	30	45	36	35	Reef Tlecom		9/5/1999	
330	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Almuhammadiyah	44	25	30	6	45	35	Reef Tlecom		9/5/1999	
680	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	109	60	Alqunitrah	1	40	31	33	0	36	Alreef Project		9/1/1999	
679	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	157	60	Altalaq	63	3	31	0	0	36	Alreef Project		9/1/1999	
681	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	149	60	Amaiba / East	57	38	31	35	59	35	Alreef Project		9/1/1999	
323	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral(90de	13	V	265	25	Beir Aldbaghat	50	25	30	34	30	35	Reef Tlecom		9/5/1999	
682	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	124	60	Hammam Alshamout	58	3	31	39	5	35	Alreef Project		9/1/1999	
338	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral (90 d	16.3	V	82	25	Hawalah	52	27	30	57	30	35	Reef Tlecom		9/5/1999	
782	Ras Naqab	44	59	29	57	30	35	1670	65	1481.25		3.5	TP		34	GRID ANT 2.1	31	H	227	32	JABAL MULGAN	39	40	29	36	7	35	Alreef SR-500		9/8/1999	H & V Both
784	POLICE REST HC	45	26	29	7	58	34	20	9	1481.25		3.5	TP		34	GRID 0.9	17	V	31	7	JABAL MULGAN	39	40	29	36	7	35	Alreef SR-500		9/8/1999	
683	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	271	60	Manjah	0	44	31	11	5	35	Alreef Project		9/1/1999	
326	Beir Khdad	34	26	30	38	32	35	1567	52.5	1481.25	4 864	3.5	TP		35	Sectoral	16.3	V	82	25	Mdabe'a	9	29	30	55	57	35	Reef Tlecom		9/5/1999	
678	El jiza	8	42	31	19	57	35	705	61	1481.25		3.5	TP		36	OMNI	4.5	V	237	60	Um Qsair	0	40	31	33	5	35	Alreef Project		9/1/1999	
281	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Abu Elesen	20	2	30	59	29	35	Reef Tlecom		9/5/1999	
279	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Alfardakh	16	11	30	42	30	35	Reef Tlecom		9/5/1999	
686	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	144	16	Aljmeel	50	28	31	40	53	35	Alreef Project		9/1/1999	
689	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	300	16	Almanshieh / Madab	13	4	31	15	4	35	Alreef Project		9/1/1999	
291	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Alqasmah	0	4	30	31	29	35	Reef Tlecom		9/5/1999	
687	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	160	16	Alramah	27	0	31	42	5	35	Alreef Project		9/1/1999	
287	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Alsadaqah	52	9	30	47	29	35	Reef Tlecom		9/5/1999	
684	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	143	16	Ameleh	25	35	31	25	56	35	Alreef Project		9/1/1999	
690	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	20	16	Atrooz	53	3	31	4	40	35	Alreef Project		9/1/1999	
273	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Parabolic (1.8	23	H	123	12	Baten Alghol	36	44	29	17	50	35	Reef Tlecom		9/5/1999	
675	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral	5.3	V	160	16	Lub	26	3	31	53	4	35	Alreef Project		9/1/1999	
277	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Mraighah	27	5	30	15	31	35	Reef Tlecom		9/5/1999	
685	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	323	16	Qahqaha	22	3	31	5	50	35	Alreef Project		9/1/1999	
289	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Qreen	47	5	30	23	28	35	Reef Tlecom		9/5/1999	
283	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	emarah	1	5	30	58	29	35	Reef Tlecom		9/5/1999	
285	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	asan	30	3	30	9	28	35	Reef Tlecom		9/5/1999	
691	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	316	16	Toar Alhashash	33	3	31	4	50	35	Alreef Project		9/1/1999	
688	Ma'een	0	41	31	32	43	35	860	20	1484.75		3.5	TP		36	Sectoral 90	9.7	V	318	16	um Ashajera	31	35	31	4	40	35	Alreef Project		9/1/1999	
275	Ras Naqab	44	59	29	57	30	35	1670	65	1484.75	4 864	3.5	TP		35	Sectoral(90de	13	V	353	62	Waheida	9	8	29	30	34	35	Reef Tlecom		9/5/1999	
783	POLICE REST HC	45	26	29	7	58	34	20	9	1488.25		3.5	TP		34	GRID 0.9	17	V	180	6.5	DIVING CENTER	58	23	29	5	58	34	Alreef SR-500		9/8/1999	
318	Ayl	22	12	30	18	32	35	1430	8	1488.25	4 864	3.5	TP		35	PANEL	17.5	V	93.1	8	Ma'an	58	11	30	14	44	35	Reef Tlecom		9/5/1999	
320	Basta	24	13	30	17	32	35	1450	8	1488.25	4 864	3.5	TP		35	Parabolic 1.2	21	V	138.2	8	Ma'an	59	11	30	15	44	35	Reef Tlecom		9/5/1999	
345	Alqle'ah	13	20	30	58	30	35	1640	40	1488.25	4 864	3.5	TP		35	Parabolic 1.8	26	V	127	8	Ma'an	57	11	30	13	44	35	Reef Tlecom		9/5/1999	
347	Abu Danah	16	15	30	9	32	35	1510	8	1488.25	4 864	3.5	TP		35	PANEL	17.5	V	138.2	8	Ma'an	55	11	30	11	44	35	Reef Tlecom		9/5/1999	
349	Adrouh	37	19	30	59	35	35	1300	8	1488.25	4 864	3.5	TP		35	PANEL	17.5	V	138.2	8	Ma'an	56	11	30	12	44	35	Reef Tlecom		9/5/1999	
780	DISEH	16	39	29	16	30	35	810	17	1488.25		3.5	TP		34	90 DEG SEC	17	H	96	15.5	MNESHEER	13	35	29	6	34	35	Alreef SR-500		9/8/1999	
311	Rahmah	47	54	29	41	8	35	190	18	1488.25	4 864	3.5	TP		35	Parabolic 1.2	23	V	12	8	Qalar	58	48	29	13	5	35	Reef Tlecom		9/5/1999	
313	Beir madkoor	51	26	30	18	17	35	122	7	1488.25	4 864	3.5	TP		35	Parabolic 0.9	21	V	28	7	Qoraiqerah	44	37	30	5	24	35	Reef Tlecom		9/5/1999	
779	DISEH	16	39	29	16	30	35	810	17	1488.25		3.5	TP		34	90 DEG SEC	17	H	96	15.5	TWESEH	0	30	29	0	50	35	Alreef SR-500		9/8/1999	
272	Almdawwarah Alhi	22	4	29	22	4	36	660	60	1491.75	4 864	3.5	TP		35	Parabolic (1.8	17.5	V	50	25	Almdawwarah / Albadiah	25	19	29	36	1	36	Reef Tlecom		9/5/1999	
303	Alqle'ah	13	20	30	58	30	35	1640	40	1491.75	4 864	3.5	TP		35	Parabolic (3.0	31	V	206	35	Alrajuf	28	10	30	29	25	35	Reef Tlecom		9/5/1999	
316	Alqle'ah	13	20	30	58	30	35	1640	40	1491.75	4 864	3.5	TP		35	Parabolic 1.8	26	V	247	35	Alreshah	42	13	30	26	13	35	Reef Tlecom		9/5/1999	
341	Alqle'ah	13	20	30	58	30	35	1640	40	1491.75	4 864	3.5	TP		35	PANEL	17.5	V	50	35	Beir Khdad	34	26	30	38	32	35	Reef Tlecom		9/5/1999	
785	AQABA	46	31	29	18	0	35	20	47.5	1491.75		3.5	TP		34	GRID 0.9	17	V	36	42	JABAL MULGAN	39	40	29	36	7	35	Alreef SR-500		9/8/1999	
314	Alqle'ah	13	20	30	58	30	35	1640	40	1491.75	4 864	3.5	TP		35	PANEL	17.5	V	50	35	Jarba	20	22	30	2	36	35	Reef Tlecom		9/5/1999	
699	Ma'een	0	41	31	32	43	35	860	20	1491.75		3.5	TP		36	Pannel	13.7	V	55	10	Madaba AR	18	43	31	43	47	35	Alreef Project		9/1/1999	
304	Alqle'ah	13	20	30	58	30	35	1640	40	1491.75	4 864	3.5	TP		35	PANEL	17.5	H	170	30	Qa'	41	16	30	38	32	35	Reef Tlecom		9/5/1999	
720	Abu-Hlailefa	20	3	31	3	53	35	715	8	1495.25		3.5	TP		36	Grid	19.7	V	175	7	Alramah	27	0	31	42	5	35	Alreef Project		9/1/1999	
721	Almastaba	19	2	31	5	58	35	760	8	1495.25		3.5	TP		36	Pannel	15.7	V	199	7	Alramah	27	0	33	44	5	35	Alreef Project		9/1/1999	
722	um Alrasas	29	0	31	50	5	35	760	8	1495.25		3.5	TP		36	Pannel	15.6	V	193	7	Alramah	27	0	36	47	5	35	Alreef Project		9/1/1999	
723	khan Alzabib	0	32	31	24	0	35	760	8	1495.25		3.5	TP		36	Pannel	17.5	V	242	7	Alramah	27	0	34	45	5	35	Alreef Project		9/1/1999	
724	Saleia	2	27	32	0	31	35	775	8	1495.25		3.5	TP		36	Pannel	15.5	V	260	7	Alramah	27	0	35	46	5	35	Alreef Project		9/1/1999	
725	Al Rmail	30	3	31	20	5	35	690	8	1495.25		3.5	TP		36	Grid	19.4	V	166	7	Alramah	27	0	32	43	5	35	Alreef Project		9/1/1999	
295	Ras Naqab	44	59	29	57	30	35	1670	65	1495.25	4 864	3.5	TP		35	Parabolic1.2	23	V	43	9	Ma'an	60	11	30	16	44	35	Reef Tlecom		9/5/1999	
293	Baten Alghol	36	44	29	17	50	35	1240	65	1498.75	4 864	3.5	TP		35	Parabolic 1.8	26	V	158	65	Almdawwarah / Albadiah	25	19	29	36	1	36	Reef Tlecom		9/5/1999	
300	Beir madkoor	51	26	30	18	17	35	122	7	1498.75	4 864	3.5	TP		35	Parabolic 1.8	26	H	10	13	Alrajuf	28	10	30	29	25	35	Reef Tlecom		9/5/1999	
307	Albida	34	23	30	56	28	35	1250	8	1498.75	4 864	3.5	TP		35	PANEL	17.5	H	190	8	Alrajuf	28	10	30	29	25	35	Reef Tlecom		9/5/1999	
768	Ras Naqab	44	59	29	57	30	35	1670	65	1498.75		3.5	TP		34	40 DEG SEC	17	H	25	62	it Hanoot	8	59	29	34	27	35	27	35	9/8/1999	
765	LORRIES PARKIN	44	26	29	52	1	35	389	9	1498.75		3.5	TP		34	GRID ANT 0.9	17	V	230	8	G CENTER	58	23	29	5	58	34	Alreef SR-500		9/8/1999	
767	Ras Naqab	44	59	29	57	30	35	1670	65	1498.75		3.5	TP		34	40 DEG SEC	17	H	257	62	Hamaimeh	9	54	29	24	24	35	Alreef SR-500		9/8/1999	
677	El jiza	8	42	31	19	57	35	705	61	1498.75		3.5	TP		36	OMNI	4.5	V	278	60	Madaba AR	18	43	34	43	47	38	Alreef Project		9/1/1999	
707	Hawarah	13	4	31	4	59	35	785	8	1498.75		3.5	TP		36	Pannel	10.7	V	299	7	Madaba AR	18	43	36	43	47	40	Alreef Project		9/1/1999	
708	Dalilat Almterat	38	3	31	49	4	35	780	8	1498.75		3.5	TP		36	Pannel	14.7	V	336	7	Madaba AR	18	43	33	43	47	37	Alreef Project		9/1/1999	
709	Alfaiha'a	25	4	31	42	4	35	825	8	1498.75		3.5	TP		36	Pannel	9.7	V	79	7	Madaba AR	18	43	32	43	47	36	Alreef Project		9/1/1999	
710	Natef	9	30	31	14	5	35	759	8	1498.75		3.5	TP		36	Pannel	14.7	V	220	7	Madaba AR	18	43	37	43	47	41	Alreef Project		9/1/1999	
711	Grainah	54	4	31	75	4	35	780	8	1498.75		3.5	TP		36	Pannel	6.6	V	192	7	Madaba AR	18	43	35	43	47	39	Alreef Project		9/1/1999	
766	Ras Naqab	44	59	29	57	30	35	1670	65	1498.75		3.5	TP		34	40 DEG SEC	17	V	257	62	NAQAB REST HOUSE	50	59	29	8	29	35	Alreef SR-500		9/8/1999	
770	Ras Naqab	44	59	29	57	30	35	1670	65	1498.75		3.5	TP		34	40 DEG SEC	17	H	257	62	RAM	30	34	29	11	25	35	Alreef SR-500		9/8/1999	
769	Ras Naqab	44	59	29	57	30	35	1670	65	1498.75		3.5	TP		34	40 DEG SEC	17	H	257	62	SALHIYYEH	57	22	35	48	41	29	Alreef SR-500		9/8/1999	
756	AQABA	46	31	29	18	0	35	20	47.5	1965.5		4	TP		33	PARABOLIC	33.8	H			RAS NAQAB EGYPT							Alaqaba Aisuez		9/8/1999	
757	AQABA	46	31	29	18	0	35	20	47.5	2023.5		4	TP		33	PARABOLIC	33.8	H		45	RAS NAQAB EGYPT							Alaqaba Aisuez		9/8/1999	
754	RAS NAQAB EGYPT							115	110	2178.5		4	TP		26	PARABOLIC 3.0					AQABA	46	31	29	18	0	35	Alaqaba Aisuez		9/8/1999	
1096	RAS NAQAB EGYPT							115	110	2236.5		4	TP		26	Parapolic					AQABA	46	31	29	18	0	35	Alaqaba Aisuez		9/8/1999	
76	Alraneh	57	9	31	49	39	35	1205	67	2308	17	8.5	TP		25	parapolic	30	H	211	25	Ay	53	7	31	20	38	35	Alreefy		9/9/1999	
118	Altafeelah	36	49	30	56	36	35	1260	42	2322	17	8.5	TP		25	parapolic	30	V	109	40	Aboor	3	48	30	4	42	35	Alreefy		9/9/1999	
97	Al Hasa	30	49	30	51	58	35	810	57	2322	17	8.5	TP		25	parapolic	31	H	216	55	Aljurf	23	41	30	51	51	35	Alreefy		9/9/1999	
81	Alraneh	57	9	31	49	39	35	1205	67	2322	17	8.5	TP		25	parapolic	30	V	284	30	Assal	41	11	31	54	31	35	Alreefy		9/9/1999	
114	Al Safi	24	2	31	58	28	35	-360	57	2322	17	8.5	TP		25	parapolic	31	H	196	55	Fifa	24	56	30	54	26	35	Alreefy		9/9/1999	
95	Al Hasa	30	49	30	51	58	35	810	57	2336	17	8.5	TP		25	parapolic	34.5	V	264	30	Aboor	3	48	30	4	42	35	Alreefy		9/9/1999	
74	Alraneh	57	9	31	49	39	35	1205	67	2336	17	8.5	TP		25	parapolic	34.5	V	76	30	Alqatranah	42	14	31	44	2	36	Alreefy		9/9/1999	8.5
112	Al Safi	24	2	31	58	28	35	-360	57	2336	17	8.5	TP		25	parapolic	34.5	V	15	55	Assal	41	11	31	54	31	35	Alreefy		9/9/1999	
123	Altafeelah	36	49	30	56	36	35	1260	42	2343	34	17	TP		25	parapolic	34.5	V	15	25	Almazar	11	4	31	31	41	35	Alreefy		9/9/1999	
77	Alraneh	57	9	31	49	39	35	1205	67	2350	17	8.5	TP		25	parapolic	30	H	211	25	Ay	53	7	31	20	38	35	Alreefy		9/9/1999	
119	Altafeelah	36	49	30	56	36	35	1260	42	2364	17	8.5	TP		25	parapolic	30	V	109	40	Aboor	3	48	30	4	42	35	Alreefy		9/9/1999	
98	Al Hasa	30	49	30	51	58	35	810	57	2364	17	8.5	TP		25	parapolic	31	H	216	55	Aljurf	23	41	30	51	51	35	Alreefy		9/9/1999	
82	Alraneh	57	9	31	49	39	35	1205	67	2364	17	8.5	TP		25	parapolic	30	V	284	30	Assal	41	11	31	54	31	35	Alreefy		9/9/1999	
115	Al Safi	24	2	31	58	28	35	-360	57	2364	17	8.5	TP		25	parapolic	31	H	196	55	Fifa	24	56	30	54	26	35	Alreefy		9/9/1999	
96	Al Hasa	30	49	30	51	58	35	810	57	2378	17	8.5	TP		25	parapolic	34.5	V	264	30	Aboor	3	48	30	4	42	35	Alreefy		9/9/1999	
75	Alraneh	57	9	31	49	39	35	1205	67	2378	17	8.5	TP		25	parapolic	34.5	H	76	30	Alqatranah	42	14	31	44	2	36	Alreefy		9/9/1999	
113	Al Safi	24	2	31	58	28	35	-360	57	2378	17	8.5	TP		25	parapolic	34.5	V	15	55	Assal	41	11	31	54	31	35	Alreefy		9/9/1999	
120	Altafeelah	36	49	30	56	36	35	1260	42	2385	34	17	TP		25	parapolic	34.5	V	15	25	Almazar	11	4	31	31	41	35	Alreefy		9/9/1999	
87	Ay	53	7	31	20	38	35	880	32	2402	17	8.5	TP		25	parapolic	30	H	31	30	Alraneh	57	9	31	49	39	35	Alreefy		9/9/1999	
108	Assal	41	11	31	54	31	35	-370	32	2416	17	8.5	TP		25	parapolic	31	V	104	30	Alraneh	57	9	31	49	39	35	Alreefy		9/9/1999	

Spectrum used in Jordan Telecom in the range 960 MHZ → 3000 MHz.

Continued

Freq_04

rec_no	tx_name	tx_e1	tx_e2	tx_e3	tx_n1	tx_n2	tx_n3	tx_hi	borj_hi	ass_freq	tx_band_mbit	tx_band_mhz	serv_type	tran_OP_mw	tran_OP_dbm	type	gain	polar	hawa_dir	hawa_hi	rec_name	rec_e1	rec_e2	rec_e3	rec_n1	rec_n2	rec_n3	proj_name	serv_date	record_date	Commets
99	Ajlurl	23	41	30	51	51	35	950	52	2416	17	8.5	TP		25	parapolic	34.5	H	36	50	Al Hasa	30	49	30	51	58	35	Alreafy		9/9/1999	
116	Fifa	24	56	30	54	26	35	-335	32	2416	17	8.5	TP		25	parapolic	34.5	H	16	30	Al Safi	24	2	31	58	28	35	Alreafy		9/9/1999	
91	Aboor	3	48	30	4	42	35	1310	42	2416	17	8.5	TP		25	parapolic	30	V	289	40	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
89	Aiqatranah	42	14	31	44	2	36	770	77	2430	17	8.5	TP		25	parapolic	34.5	H	256	75	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
93	Aboor	3	48	30	4	42	35	1310	42	2430	17	8.5	TP		25	parapolic	31	V	84	30	Al Hasa	30	49	30	51	58	35	Alreafy		9/9/1999	
110	Assal	41	11	31	54	31	35	-370	32	2430	17	8.5	TP		25	parapolic	35	V	195	30	Al Safi	24	2	31	58	28	35	Alreafy		9/9/1999	
101	Almazar	11	4	31	31	41	35	1240	83	2437	34	17	TP		25	parapolic	31	V	195	80	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
88	Ay	53	7	31	20	38	35	880	32	2444	17	8.5	TP		25	parapolic	30	H	31	30	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
109	Assal	41	11	31	54	31	35	-370	32	2458	17	8.5	TP		25	parapolic	31	V	104	30	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
100	Ajlurl	23	41	30	51	51	35	950	52	2458	17	8.5	TP		25	parapolic	34.5	H	36	50	Al Hasa	30	49	30	51	58	35	Alreafy		9/9/1999	
117	Fifa	24	56	30	54	26	35	-335	32	2458	17	8.5	TP		25	parapolic	34.5	H	16	30	Al Safi	24	2	31	58	28	35	Alreafy		9/9/1999	
92	Aboor	3	48	30	4	42	35	1310	42	2458	17	8.5	TP		25	parapolic	30	V	289	40	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
90	Aiqatranah	42	14	31	44	2	36	770	77	2472	17	8.5	TP		25	parapolic	34.5	H	256	75	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
94	Aboor	3	48	30	4	42	35	1310	42	2472	17	8.5	TP		25	parapolic	31	V	84	30	Al Hasa	30	49	30	51	58	35	Alreafy		9/9/1999	
111	Assal	41	11	31	54	31	35	-370	32	2472	17	8.5	TP		25	parapolic	34.5	V	195	30	Al Safi	24	2	31	58	28	35	Alreafy		9/9/1999	
102	Almazar	11	4	31	31	41	35	1240	83	2479	34	17	TP		25	parapolic	31	V	195	80	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
103	Taiba	41	2	31	53	35	35	1220	22	2491.5	34	17	TP		25	parapolic	31	H	24	20	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
266	Aiqle'ah	13	20	30	58	30	35	1640	40	2491.5	34	17	TP		30	Parabolic (3.(	31	V	140	15	Ma'an	61	11	30	17	44	35	France Project		9/5/1999	
85	Alkarak Exchange	13	11	31	17	42	35	980	57	2505.5	34	17	TP		25	parapolic	30	V	239	50	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
106	Taiba	41	2	31	53	35	35	1220	22	2505.5	34	17	TP		25	parapolic	31	H	176	20	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
268	Alsheedieh	17	56	29	14	8	36	915	5	2512.5	34	17	TP		30	Parabolic (3.(	31	H	306	17	Ma'an	62	11	30	18	44	35	France Project		9/5/1999	
105	Taiba	41	2	31	53	35	35	1220	22	2519.5	34	17	TP		25	parapolic	31	H	24	20	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
107	Taiba	41	2	31	53	35	35	1220	22	2533.5	34	17	TP		25	parapolic	31	H	176	20	Altafeelah	36	49	30	56	36	35	Alreafy		9/9/1999	
86	Alkarak Exchange	13	11	31	17	42	35	980	57	2535.5	34	17	TP		25	parapolic	30	V	239	50	Afraneh	57	9	31	49	39	35	Alreafy		9/5/1999	
104	Taiba	41	2	31	53	35	35	1220	22	2547.5	34	17	TP		25	parapolic	31	H	24	20	Afraneh	57	9	31	49	39	35	Alreafy		9/5/1999	
267	Aiqle'ah	13	20	30	58	30	35	1640	40	2547.5	34	17	TP		30	Parabolic (3.(	31	V	140	15	Ma'an	63	11	30	19	44	35	France Project		9/5/1999	
84	Alkarak Exchange	13	11	31	17	42	35	980	57	2561.5	34	17	TP		25	parapolic	30	V	239	50	Afraneh	57	9	31	49	39	35	Alreafy		9/9/1999	
269	Alsheedieh	17	56	29	14	8	36	915	5	2568.5	34	17	TP		30	Parabolic (3.(	31	H	306	17	Ma'an	64	11	30	20	44	35	France Project		9/5/1999	
265	Ma'an	48	11	30	4	44	35	1100	52.5	2610.5	34	17	TP		30	Parabolic (3.(	31	V	320	25	Aiqle'ah	13	20	30	58	30	35	France Project		9/5/1999	
78	Afraneh	57	9	31	49	39	35	1205	67	2610.5	17	8.5	TP		25	parapolic	34.5	H	204	20	Taiba	41	2	31	53	35	35	Alreafy		9/9/1999	
71	Afraneh	57	9	31	49	39	35	1205	67	2624.5	34	17	TP		25	parapolic	34.5	V	59	40	Alkarak Exchange	13	11	31	17	42	35	Alreafy		9/9/1999	
121	Altafeelah	36	49	30	56	36	35	1260	42	2624.5	34	17	TP		25	parapolic	34.5	H	356	20	Taiba	41	2	31	53	35	35	Alreafy		9/9/1999	
263	Ma'an	48	11	30	4	44	35	1100	52.5	2631.5	34	17	TP		30	Parabolic (3.(	31	H	126	30	Alsheedieh	17	56	29	14	8	36	France Project		9/5/1999	
79	Afraneh	57	9	31	49	39	35	1205	67	2638.5	34	17	TP		25	parapolic	34.5	H	204	20	Taiba	41	2	31	53	35	35	Alreafy		9/9/1999	
73	Afraneh	57	9	31	49	39	35	1205	67	2652.5	34	17	TP		25	parapolic	34.5	V	59	40	Alkarak Exchange	13	11	31	17	42	35	Alreafy		9/9/1999	
122	Altafeelah	36	49	30	56	36	35	1260	42	2652.5	34	17	TP		25	parapolic	34.5	H	356	20	Taiba	41	2	31	53	35	35	Alreafy		9/9/1999	
262	Ma'an	48	11	30	4	44	35	1100	52.5	2666.5	34	17	TP		30	Parabolic (3.(	31	V	320	25	Aiqle'ah	13	20	30	58	30	35	France Project		9/5/1999	
80	Afraneh	57	9	31	49	39	35	1205	67	2666.5	34	17	TP		25	parapolic	34.5	H	204	20	aiba	41	2	31	53	35	35	Alreafy		9/9/1999	
72	Afraneh	57	9	31	49	39	35	1205	67	2680.5	34	17	TP		25	parapolic	34.5	V	59	40	Al. .k Exchange	13	11	31	17	42	35	Alreafy		9/9/1999	
264	Ma'an	48	11	30	4	44	35	1100	52.5	2687.5	34	17	TP		30	Parabolic (3.(	31	H	126	30	Alsheedieh	17	56	29	14	8	36	France Project		9/5/1999	
255	Beir Khdad	34	26	30	38	32	35	1567	52.5	3824.5	68	23	TP		30	Parabolic (3.(	39.4	V	14	35	Alhala	12	46	30	35	38	35	REGIONAL		9/5/1999	
928	El jiza	8	42	31	19	57	35	705	61	3824.5	68	23	TP		30.7	NEC-EP	41	H	2	27	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/8/1999	
932	Abdali	14	58	31	34	54	35	902	67.5	3824.5	68	23	TP		30.7	NEC-EP	35	H	144	53	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/7/1999	
57	Afraneh	57	9	31	49	39	35	1205	67	3824.5	68	23	TP		30	parapolic	41	H	162	65	Alhala	12	46	30	35	38	35	REGIONAL		9/5/1999	
229	Ras Naqab	44	59	29	57	30	35	1670	65	3824.5	68	23	TP		30	Parabolic (3.(	41	H	226	30	JABAL MULGAN	39	40	29	36	7	35	REGIONAL		9/5/1999	
741	AQABA	46	31	29	18	0	35	20	47.5	3824.5	68	23	TP		30	PARABOLIC	39.4	V	35	27.5	JABAL MULGAN	39	40	29	36	7	35	Region NEC		9/8/1999	
250	Beir Khdad	34	26	30	38	32	35	1567	52.5	3824.5	68	23	TP		30	Parabolic (3.(	39.4	H	146.17	45	Ma'an	65	11	30	21	44	35	REGIONAL		9/5/1999	
1092	Ras Naqab	44	59	29	57	30	35	1670	65	3824.5	68	23	TP		30	Parabolic (3.(	39.4	H	44	50	Ma'an	66	11	30	22	44	35	REGIONAL		9/5/1999	
61	Afraneh	57	9	31	49	39	35	1205	67	3824.5	68	23	TP		30	parapolic	39.4	H	20	25	MUGHIER	35	24	31	16	46	35	REGIONAL		9/9/1999	
924	El jiza	8	42	31	19	57	35	705	61	3824.5	68	23	TP		30.7	NEC-EP	39.5	H	208	45	MUGHIER	35	24	31	16	46	35	REGIONAL		9/8/1999	
66	Afraneh	57	9	31	49	39	35	1205	67	3853.5	68	23	TP		30	parapolic	35	H	59	65	Alkarak Exchange	13	11	31	17	42	35	REGIONAL		9/9/1999	
256	Beir Khdad	34	26	30	38	32	35	1567	52.5	3882.5	68	23	TP		30	Parabolic (3.(	39.4	V	14	35	Alhala	12	46	30	35	38	35	REGIONAL		9/5/1999	
925	El jiza	8	42	31	19	57	35	705	61	3882.5	68	23	TP		30.7	NEC-EP	41	V	2	27	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/8/1999	
931	Abdali	14	58	31	34	54	35	902	67.5	3882.5	68	23	TP		30.7	NEC-EP	35	H	144	53	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/7/1999	
56	Afraneh	57	9	31	49	39	35	1205	67	3882.5	68	23	TP		30	parapolic	41	H	162	65	Alhala	12	46	30	35	38	35	REGIONAL		9/9/1999	
230	Ras Naqab	44	59	29	57	30	35	1670	65	3882.5	68	23	TP		30	Parabolic (3.(	41	H	226	30	JABAL MULGAN	39	40	29	36	7	35	REGIONAL		9/5/1999	
732	AQABA	46	31	29	18	0	35	20	47.5	3882.5	68	23	TP		30	PARABOLIC	39.4	V	35	27.5	JABAL MULGAN	39	40	29	36	7	35	Region NEC		9/8/1999	
225	Ras Naqab	44	59	29	57	30	35	1670	65	3882.5	68	23	TP		30	Parabolic (3.(	39.4	H	44	50	Ma'an	68	11	30	24	44	35	REGIONAL		9/5/1999	
249	Beir Khdad	34	26	30	38	32	35	1567	52.5	3882.5	68	23	TP		30	Parabolic (3.(	39.4	H	146.17	45	Ma'an	67	11	30	23	44	35	REGIONAL		9/5/1999	
60	Afraneh	57	9	31	49	39	35	1205	67	3882.5	68	23	TP		30	parapolic	39.4	H	20	25	MUGHIER	35	24	31	16	46	36	REGIONAL		9/9/1999	
923	El jiza	8	42	31	19	57	35	705	61	3882.5	68	23	TP		30.7	NEC-EP	39.5	H	208	45	MUGHIER	35	24	31	16	46	35	REGIONAL		9/8/1999	
257	Beir Khdad	34	26	30	38	32	35	1567	52.5	3940.5	68	23	TP		30	Parabolic (3.(	39.4	V	14	35	Alhala	12	46	30	35	38	35	REGIONAL		9/5/1999	
926	El jiza	8	42	31	19	57	35	705	61	3940.5	68	23	TP		30.7	NEC-EP	41	V	2	27	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/8/1999	
930	Abdali	14	58	31	34	54	35	902	67.5	3940.5	68	23	TP		30.7	NEC-EP	35	H	144	53	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/7/1999	
55	Afraneh	57	9	31	49	39	35	1205	67	3940.5	68	23	TP		30	parapolic	41	H	162	65	Alhala	12	46	30	35	38	35	REGIONAL		9/9/1999	
231	Ras Naqab	44	59	29	57	30	35	1670	65	3940.5	68	23	TP		30	Parabolic (3.(	41	H	226	30	JABAL MULGAN	39	40	29	36	7	35	REGIONAL		9/5/1999	
731	AQABA	46	31	29	18	0	35	20	47.5	3940.5	68	23	TP		30	PARABOLIC	39.4	V	35	27.5	JABAL MULGAN	39	40	29	36	7	35	Region NEC		9/8/1999	
226	Ras Naqab	44	59	29	57	30	35	1670	65	3940.5	68	23	TP		30	Parabolic (3.(	39.4	H	44	50	Ma'an	70	11	30	26	44	35	REGIONAL		9/5/1999	
248	Beir Khdad	34	26	30	38	32	35	1567	52.5	3940.5	68	23	TP		30	Parabolic (3.(	39.4	H	146.17	45	Ma'an	69	11	30	25	44	35	REGIONAL		9/5/1999	
59	Afraneh	57	9	31	49	39	35	1205	67	3940.5	68	23	TP		30	parapolic	39.4	H	20	25	MUGHIER	35	24	31	16	46	37	REGIONAL		9/9/1999	
922	El jiza	8	42	31	19	57	35	705	61	3940.5	68	23	TP		30.7	NEC-EP	39.5	H	20	45	GHIER	35	24	31	16	46	35	REGIONAL		9/8/1999	
927	El jiza	8	42	31	19	57	35	705	61	3969.5	68	23	TP		30.7	NEC-EP	41	H	2	27	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/8/1999	
929	Abdali	14	58	31	34	54	35	902	67.5	3969.5	68	23	TP		30.7	NEC-EP	35	V	144	53	Abu Alanda	26	54	31	43	57	35	REGIONAL		9/7/1999	
65	Afraneh	57	9	31	49	39	35	1205	67	3969.5	68	23	TP		30	parapolic	35	H	59	65	Alkarak Exchange	14	11	31	17	42	35	REGIONAL		9/9/1999	
58	Afraneh	57	9	31	49	39	35	1205	67	3969.5	68	23	TP		30	parapolic	39.4	H	20	25	MUGHIER	35	24	31	16	46	38	REGIONAL		9/9/1999	
921	El jiza	8	42	31	19	57	35	705	61	3969.5	68	23	TP		30.7	NEC-EP	39.5	V	208	45	MUGHIER	35	24	31	16	46	35	REGIONAL		9/8/1999	
933	Abu Alanda	26	54	31	43	57	35	1000	59	4037.5	68	23	TP		30.7	NEC-EP	35	H	325	25	Abdali	14	58	31	34	54	35	REGIONAL		9/7/1999	
32	Alhala	12	46	30	35	38	35	1526	52.5	4037.5	68	23	TP		30	parapolic	41	H	2	40	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
38	MUGHIER	35	24	31	16	46	34	935	37.5	4037.5	68	23	TP		30	parapolic	39.4	H	20	30	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
742	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	4037.5	68	23	TP		30	PARABOLIC	39.4	V	215	25	AQABA	46	31	29	18	0	35	Region NEC		9/8/1999	
25	Alhala	12	46	30	35	38	35	1526	52.5	4037.5	68	23	TP		30	parapolic	39.4	V	194	40	Beir Khdad	34	26	30	38	32	35	REGIONAL		9/9/1999	
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743	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	4037.5	68	23	TP		30	PARABOLIC	39.4	H	46	25	RAS NAQAB	44	59	29	57	30	35	Region NEC		9/8/1999	
68	Alkarak Exchange	13	11	31	17	42	35	980	57	4066.5	68	23	TP		30	parapolic	35	H	239	45	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
936	Abu Alanda	26	54	31	43	57	35	1000	59	4095.5	68	23	TP		30.7	NEC-EP	35	H	325	25	Abdali	14	58	31	34	54	35	REGIONAL		9/7/1999	
30	Alhala	12	46	30	35	38	35	1526	52.5	4095.5	68	23	TP		35	parapolic	44	H	2	40	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
37	MUGHIER	35	24	31	16	46	34	935	37.5	4095.5	68	23	TP		30	parapolic	39.4	H	20	30	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
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245	Ma'an	48	11	30	4	44	35	1100	52.5	4095.5	68	23	TP		30	Parabolic (3.(	39.4	H	326	50	Beir Khdad	34	26	30	38	32	35	REGIONAL		9/5/1999	
41	MUGHIER	35	24	31	16	46	34	935	37.5	4095.5	68	23	TP		30	parapolic	40	H	28	35	EL Jiza	8	42	31	19	57	35	REGIONAL		9/9/1999	
939	Abu Alanda	26	54	31	43	57	35	1000	59	4095.5	68	23	TP		30.7	NEC-EP	41	V	181	30	EL Jiza	8	42	31	19	57	35	REGIONAL		9/7/1999	
237	Ma'an	48	11	30	4	44	35	1100	52.5	4095.5	68	23	TP		30	Parabolic (3.(	39.4	H	224	30	RAS NAQAB	44	59	29	57	30	35	REGIONAL		9/5/1999	
749	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	4095.5	68	23	TP		30	PARABOLIC	39.4	H	46	25	RAS NAQAB	44	59	29	57	30	35	Region NEC		9/8/1999	
67	Alkarak Exchange	13	11	31	17	42	35	980	57	4124.5	68	23	TP		30	parapolic	35	H	239	45	Afraneh	57	9	31	49	39	35	REGIONAL		9/9/1999	
935	Abu Alanda	26	54	31	43	57	35	1000	59	4153.5	68	23	TP		30.7	NEC-EP	35	H	325	25	Abdali	14	58	31	34	54	35	REGIONAL		9/7/1999	
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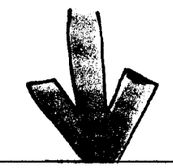
739	JABAL MULGAN	39	40	29	36	7	35	1310	37.5	4153.5	68	23	TP		30	PARABOLIC	39.4	V	215	25	AQABA	46	31	29	18	0	35	Region NEC		9/8/1999	
24	Alhala	12	46	30	35	38	35	1526	52.5	4153.5	68	23	TP		30	parapolic	39.4	V	194	40	Beir Khdad	34	26	30	38	32	35	REGIONAL		9/9/1999	
243	Ma'an	48	11	30	4	44	35	1100	52.5	4153.5	68	23	TP		30	Parabolic (3.(	39.4	H	326	50	Beir Khdad	34	26	30	38	32	35	REGIONAL		9/5/1999	
39	MUGHIER	35	24	31	16	46	34	935	37.5	4153.5	68	23	TP		30	parapolic	39.4	H	28	35	EL Jiza	8	42	31	19	57	35	REGIONAL		9/9/1999	
938	Abu Alanda	26	54	31	43	57	35	1000	59	4153.5	68	23	TP		30.7	NEC-EP	41	V	181	30	EL Jiza	8	42	31	19	57	35	REGIONAL		9/7/1999	
238	Ma'an	48	11	30	4	44	35	1100	52.5	4153.5	68	23	TP		30	Parabolic (3.(	39.4	H	224	30	RAS NAQAB	44	59	29	57	30	35	REGIONAL		9/5/1999	

Spectrum used in Jordan Telecom in the range 960MHZ → 3000MHZ.



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