FIXED

MOBILE

FIXED SATELLITE

MOBILE S

ACTIVITY CODE

GOVERNMENT EXCLUSIVE

NON-GOVERNMENT EXCLUSIVE

ALLOCATION USAGE DESIGNAT

SERVICE	EXAMPLE	DESCRIPTION
Primary	FIXED	Capital Letters
Secondary	Mobile	1st Capital with lo
Permitted	/BROADCASTING/	Capital Letters be

U.S. DEPARTMENT OF
National Telecommunicati
Office of Spectrum Manager

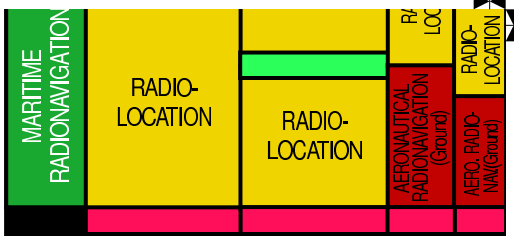
March 1996

AND TIME SIGNAL

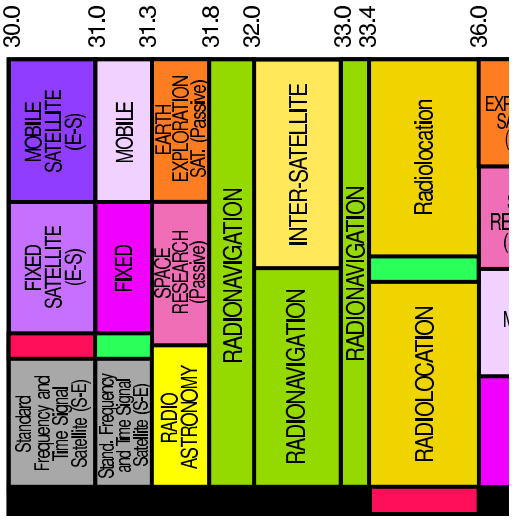
.E SATELLITE

STANDARD FREQUENCY
AND TIME SIGNAL SATELLITE

GOVERNMENT/NON-GOVERNMENT SHARED



3 GHz



30 GHz

* EXCEPT AERO MOBILE (R)

** EXCEPT AERO MOBILE

‡‡ BAND TO BE DESIGNATED FOR MIXED USE

BAND ALLOCATED TO PERSONAL COMMUNICATIONS SERVI

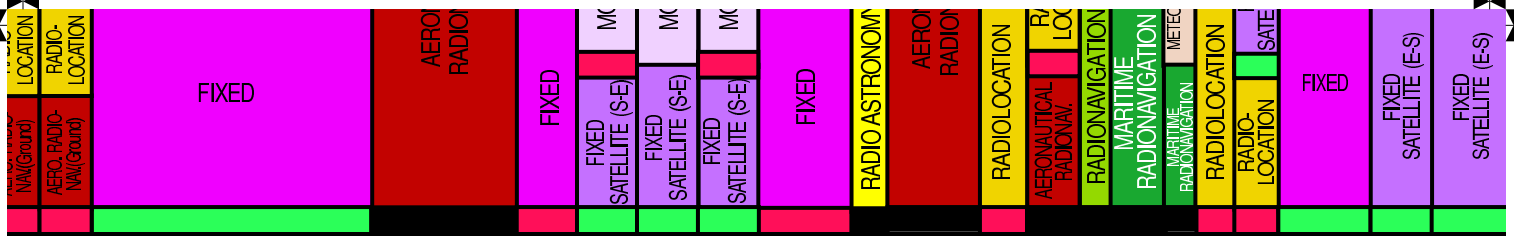
ATION

N

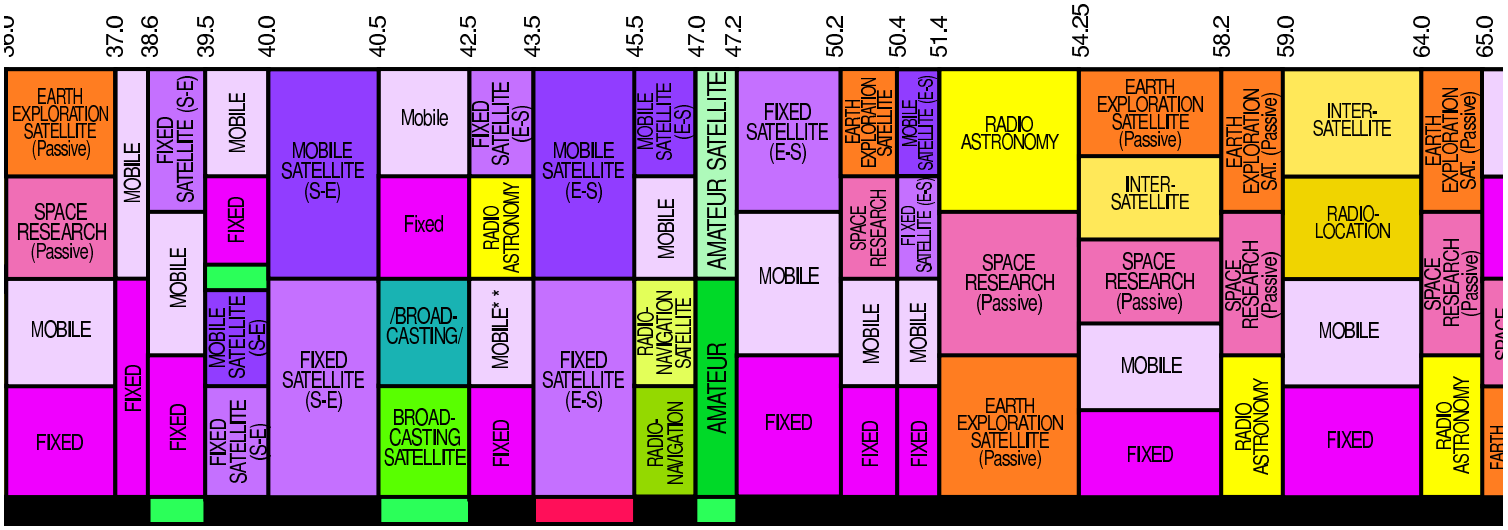
h lower case letters

s between oblique strokes

F COMMERCE
tions and Information Administration
ement

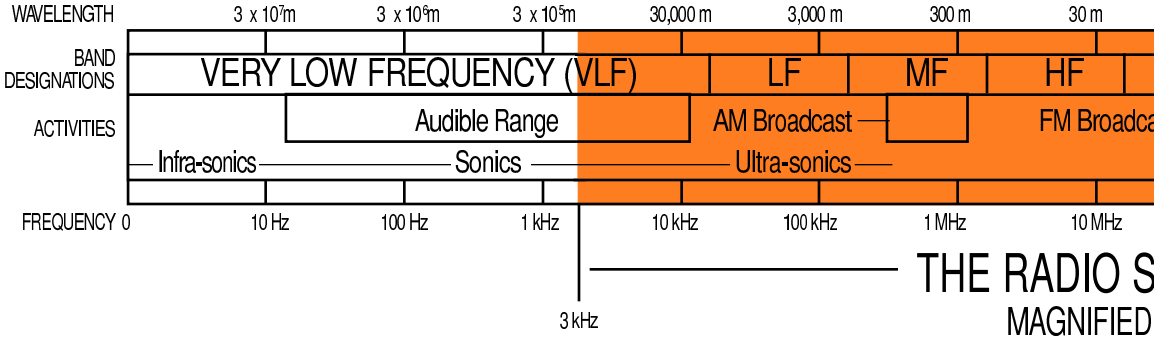


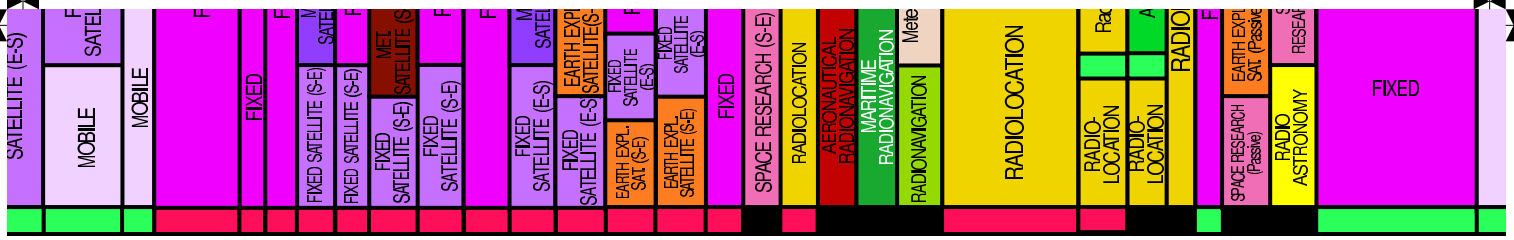
ISM – 5.8 ± .075 GHz

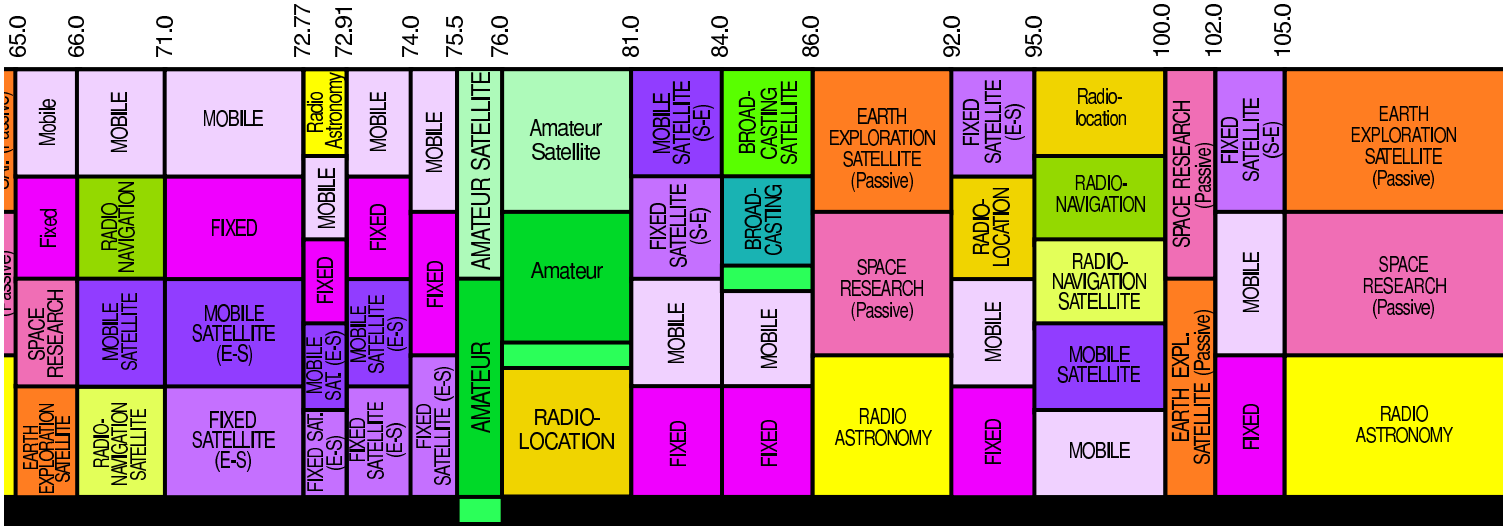


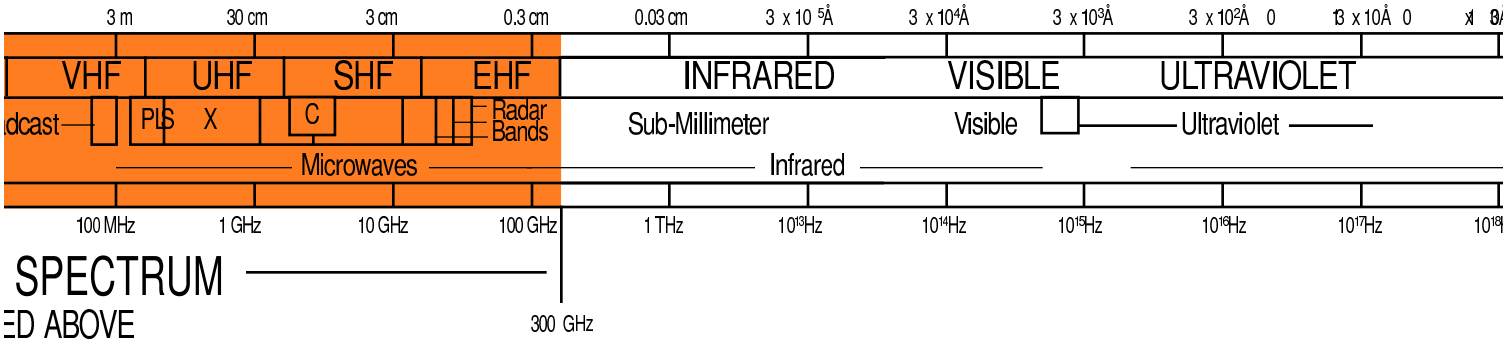
ISM – 61.25 ± .250 GHz
59-64 GHz IS DESIGNATED FOR UNLICENSED DEVICES

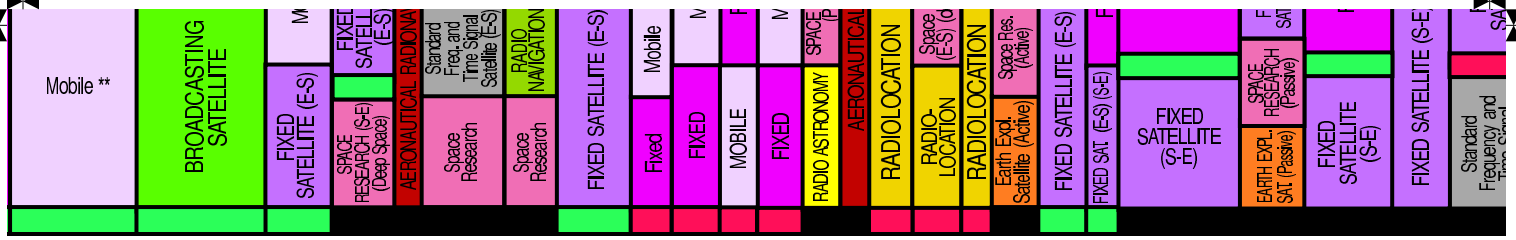
ERVICES (PCS)

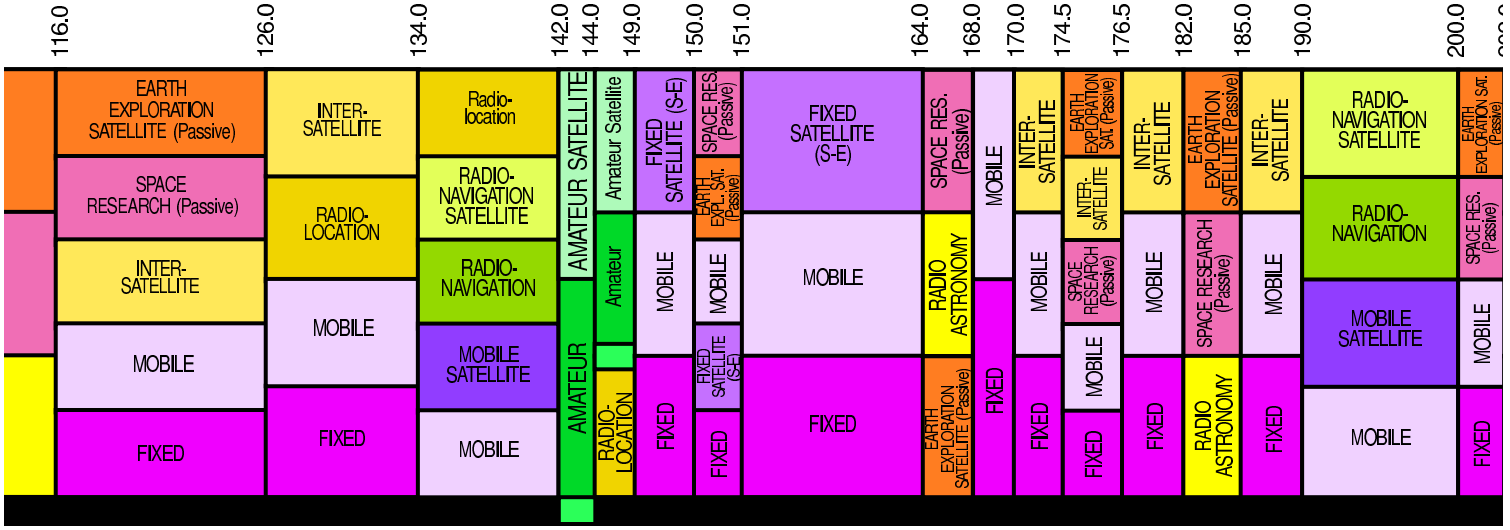



SATELLITE (E-S)
MOBILE
MOBILE
FIXED
FIXED SATELLITE (S-E)
FIXED SATELLITE (S-E)
FIXED SATELLITE (S-E)
FIXED SATELLITE (S-E)
FIXED SATELLITE (E-S)
FIXED SATELLITE (E-S)
EARTH EXPL. SATELLITE (S-E)
FIXED SATELLITE (E-S)
EARTH EXPL. SAT (S-E)
FIXED SATELLITE (S-E)
EARTH EXPL. SATELLITE (S-E)
FIXED
SPACE RESEARCH (S-E)
RADIOLOCATION
AERONAUTICAL RADIONAVIGATION
MARITIME RADIONAVIGATION
RADIONAVIGATION
RADIOLOCATION
RADIO-LOCATION
RADIO-LOCATION
RADIO
SPACE RESEARCH (Passive)
EARTH EXPL. SAT. (Passive)
RADIO ASTRONOMY
FIXED

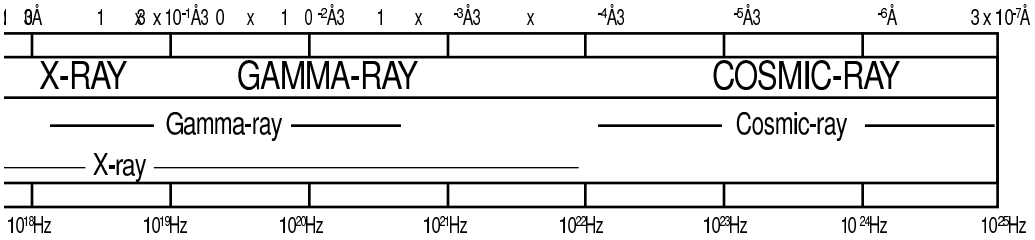

65.0
66.0
71.0
72.77
72.91
74.0
75.5
76.0
81.0
84.0
86.0
92.0
95.0
100.0
102.0
105.0
Mobile
MOBILE
MOBILE
Radio Astronomy
MOBILE
MOBILE
AMATEUR SATELLITE
Amateur Satellite
MOBILE SATELLITE (S-E)
BROAD-CASTING SATELLITE
EARTH EXPLORATION SATELLITE (Passive)
FIXED SATELLITE (E-S)
Radio-location
FIXED SATELLITE (S-E)
EARTH EXPLORATION SATELLITE (Passive)
Fixed
RADIO NAVIGATION
FIXED
MOBILE
FIXED
FIXED
Amateur
FIXED SATELLITE (S-E)
BROAD-CASTING
SPACE RESEARCH (Passive)
RADIO-LOCATION
RADIO-NAVIGATION
MOBILE
SPACE RESEARCH (Passive)
SPACE RESEARCH
MOBILE SATELLITE
MOBILE SATELLITE (E-S)
FIXED
MOBILE SATELLITE (E-S)
FIXED
AMATEUR
RADIO-LOCATION
MOBILE
MOBILE
MOBILE
RADIO-NAVIGATION SATELLITE
MOBILE SATELLITE
EARTH EXPL. SATELLITE (Passive)
MOBILE
SPACE RESEARCH (Passive)
EARTH EXPLORATION SATELLITE
RADIO-NAVIGATION SATELLITE
FIXED SATELLITE (E-S)
FIXED SAT. (E-S)
FIXED SATELLITE (E-S)
FIXED SATELLITE (E-S)
RADIO-LOCATION
FIXED
FIXED
FIXED
RADIO ASTRONOMY
RADIO ASTRONOMY

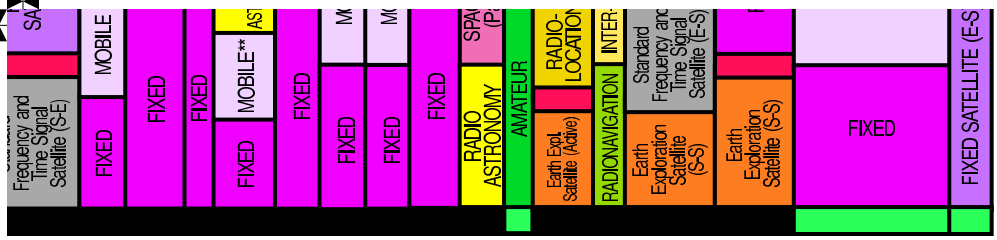

3 m
30 cm
3 cm
0.3 cm
0.03 cm
3 x 10 5Å
3 x 104Å
3 x 103Å
3 x 102Å
VHF
UHF
SHF
EHF
INFRARED
VISIBLE
ULTRAVIOLET
PLS
X
C
Radar Bands
Sub-Millimeter
Visible
Ultraviolet
Microwaves
Infrared
100 MHz
1 GHz
10 GHz
100 GHz
1 THz
1013Hz
1014Hz
1015Hz
1016Hz
1017Hz
SPECTRUM
300 GHz





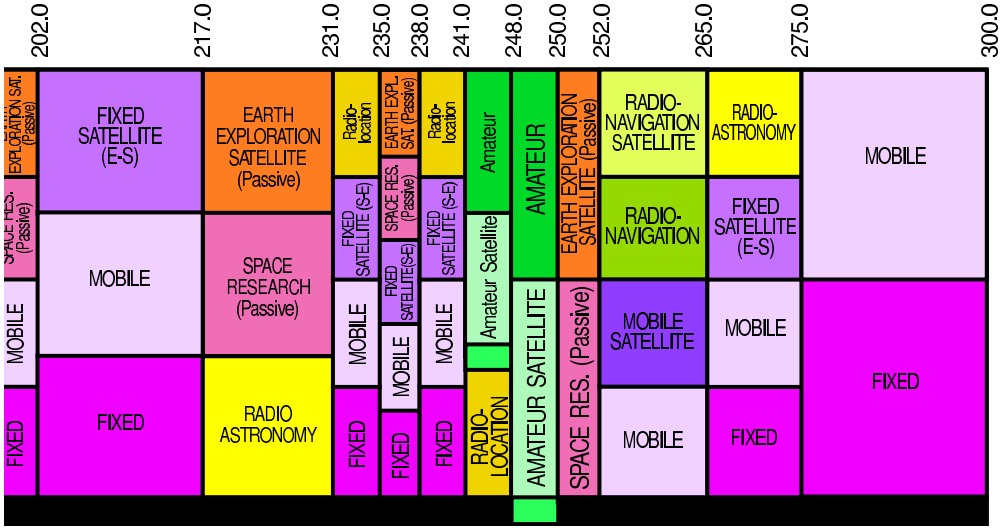
ISM – 122.5 ± .500 GHz





ISM – 24.125 ± 0.125 GHz

30 GHz



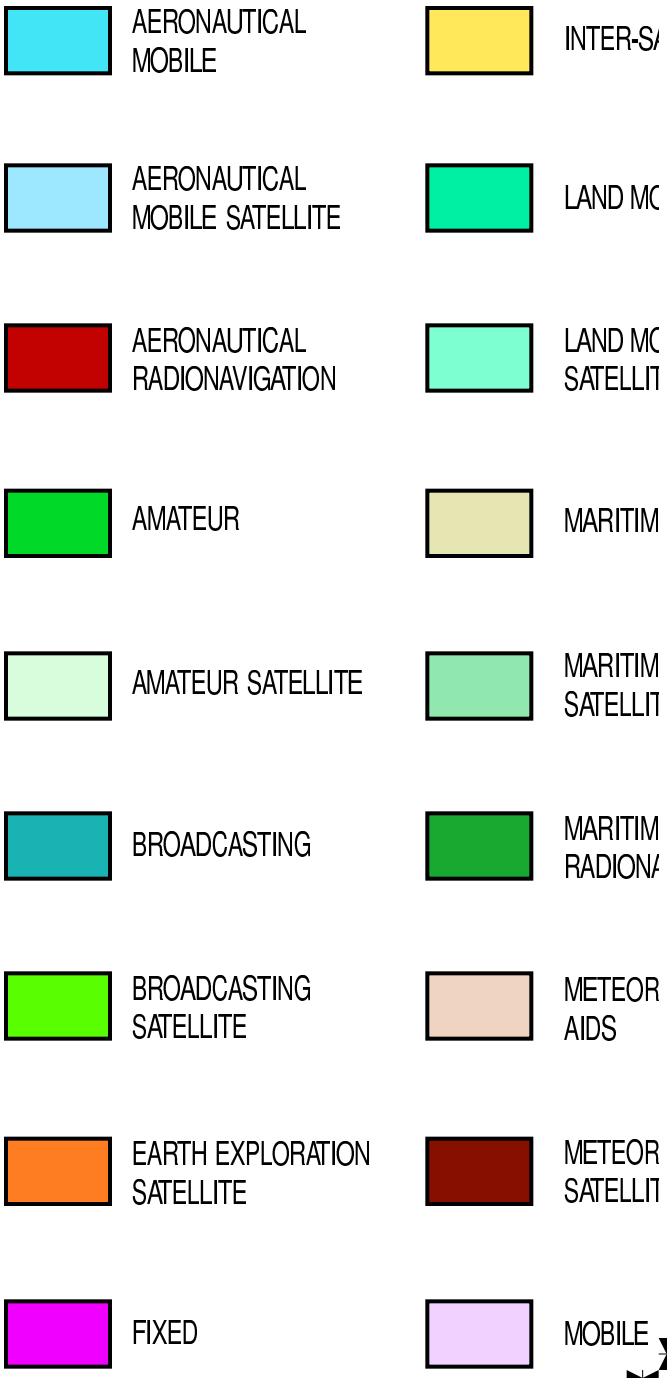
ISM – 245.0 ± 1GHz

300 GHz

PLEASE NOTE: THE SPACING ALLOTED THE SERVICES IN THE SPECTRUM SEGMENTS SHOWN IS NOT PROPORTIONAL TO THE ACTUAL AMOUNT OF SPECTRUM OCCUPIED.

THE RADIO

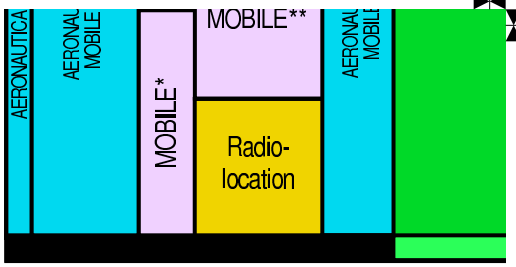
RADIO SERVICES COLOR LEGE



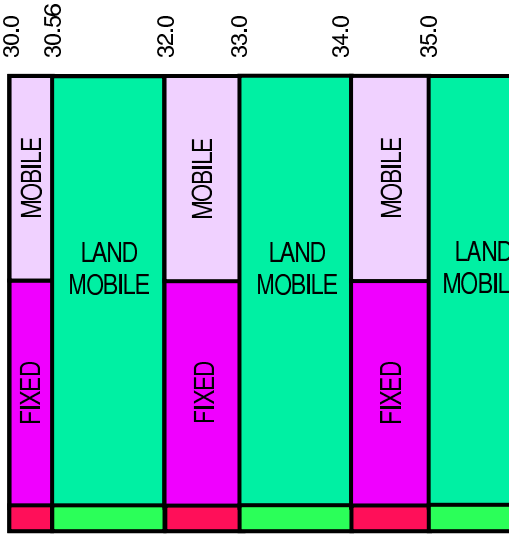
SPECTRUM

END

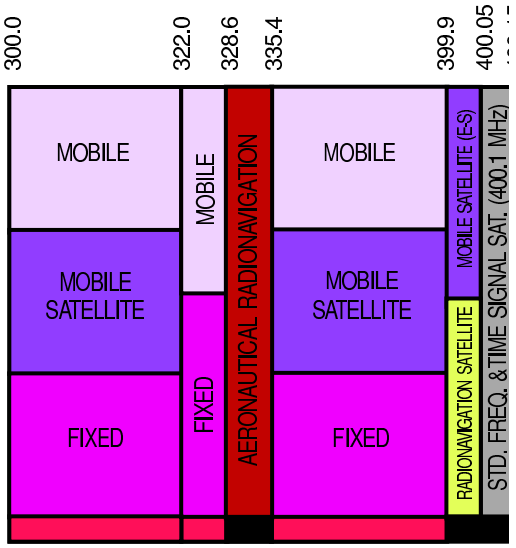
-SATELLITE	RADIO ASTRONOMY
MOBILE	RADIODETERMINATION SATELLITE
MOBILE -LITE	RADIOLOCATION
TIME MOBILE	RADIOLOCATION SATELLITE
TIME MOBILE -LITE	RADIONAVIGATION
TIME ONAVIGATION	RADIONAVIGATION SATELLITE
OROLOGICAL	SPACE OPERATION
OROLOGICAL -LITE	SPACE RESEARCH
-E	STANDARD FREQUENCY AND TIME SIGNAL



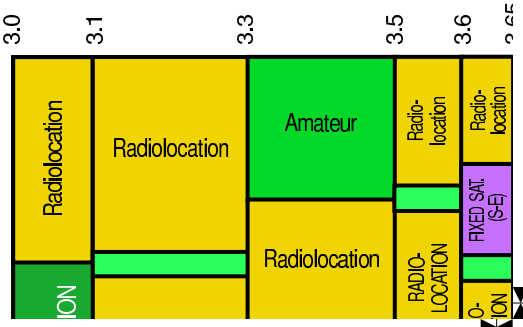
3 MHz



30 MHz



300 MHz



Grid (2 , 2)

AMATEUR
MARITIME MOBILE
MOBILE
MOBILE*
AERONAUTICAL
AERONAUTICAL
MOBILE*
FIXED
STANDARD FREQ. AND T
STANDARD FREQ.
FIXE
MOBILE**
AERONAUTICA
AERONAUTICAL
MOBILE*
BROADCA
MARITIME
36.0
37.0
37.5
38.0
38.25
39.0
40.0
42.0
46.6
47.0
49.6
50.0
54.0
ND
BILE
MOBILE
FIXED
LAND MOBILE
Radio Astronomy
RADIO ASTRONOMY
LAND MOBILE
MOBILE
FIXED
MOBILE
FIXED
LAND MOBILE
MOBILE
FIXED
LAND MOBILE
MOBILE
FIXED
LAND MOBILE
MOBILE
FIXED
AMATEUR
BROADCASTING
(TV CHANNELS 2
ISM – 40.68 ± .02 MHz
400.05
400.15
401.0
402.0
403.0
406.0
406.1
410.0
420.0
450.0
460.0
470.0
512.0
608.0
614.0
STD. FREQ. & TIME SIGNAL SAT. (400.1 MHz)
MET. AIDS (Radiosonde)
MOBILE SAT. (S-E)
SPACE RES. (S-E)
Space Opn. (S-E)
MET. SAT. (S-E)
MET. AIDS (Radiosonde)
SPACE OPN. Space to Earth
Met. Satellite (E-S)
Earth Expl. Satellite (E-S)
MET. AIDS (Radiosonde)
Meteorological Satellite (E-S)
Earth Expl. Satellite (E-S)
METEOROLOGICAL AIDS (RADIOSONDE)
MOBILE SATELLITE (E-S)
RADIO ASTRONOMY
FIXED
MOBILE
FIXED
MOBILE
Space Research (S-E)
RADIOLOCATION
Amateur
LAND MOBILE
LAND MOBILE
Meteorological Satellite (S-E)
BROADCASTING
(TV CHANNELS 14-20)
LAND MOBILE
BROADCASTING
(TV CHANNELS 21-36)
RADIO ASTRONOMY
3.65
3.7
4.2
4.4
4.5
4.66
4.685
4.8
4.99
5.0
5.25
5.35
5.46
5.47
5.6
5.65
5.85
5.925
6.425
6.525
location
Radio-
location
FIXED
SATELLITE
(S-E)
(S-E)
FIXED SAT.
(S-E)
RONAUTICAL
DIONAVIGATION
MOBILE
FIXED
MOBILE
FIXED
MOBILE
FIXED
MOBILE
Space Research (Passive)
OMY
RONAUTICAL
DIONAVIGATION
Radiolocation
ON
Radio-
location
RADIO-
LOCATION
Radiolocation
ON
Radiolocation
ON
Radiolocation
METEOROLOGICAL
AIDS
Amateur
ON
Amateur
FIXED
SATELLITE (E-S)
FIXED
SATELLITE
(E-S)
MOBILE
FIXED
ION
C-
ION
Grid (2 , 3)

MARITIME
AERONAUTICA
AERONAUTICAL
Mobile
AMATEUR
AMATE
Mobile
MARITIME MOBILE
MOBILE
AERONAUTICAL
AERONAUTICAL
BROADCA
FIXE
STANDARD FREQ. AND TIM
STANDARD FREQ.
AERONAUTICAL
AMATE
Mobile*
AERONAUTICAL
AERONAUTICAL
FIXE
ISM – 6.78 ± .015 MHz
72.0
73.0
74.6
74.8
75.2
75.4
76.0
88.0
108.0
TING
S 2-4)
MOBILE
FIXED
RADIO ASTRONOMY
MOBILE
FIXED
AERONAUTICAL RADIONAVIGATION
MOBILE
FIXED
MOBILE
FIXED
BROADCASTING
(TV CHANNELS 5-6)
BROADCASTING
(FM RADIO)
AERONAUTIC
RADIONAVIGAT
806
902
928
929
932
935
940
941
944
960
1215
1240
BROADCASTING
(TV CHANNELS 38-69)
LAND MOBILE
Amateur
RADIOLOCATION
FIXED
LAND MOBILE
FIXED
LAND MOBILE
MOBILE
FIXED
FIXED
AERONAUTICAL
RADIONAVIGATION
RADIOLOCATION
RADIONAVIGATION
SATELLITE (S-E)
Amateur
RADIOLOCATION
ISM – 915.0 ± 13 MHz
6.875
7.075
7.125
7.19
7.235
7.25
7.30
7.45
7.55
7.75
7.90
8.025
8.175
8.215
8.4
8.45
8.5
9.0
9.2
9.3
9.5
10.0
10.45
10.5
10.55
10.6
10.68
10.7
11.7
FIXED
FIXED
SATELLITE (E-S)
FIXED
FIXED
SPACE RESEARCH (E-S)
FIXED
MOBILE
SATELLITE (S-E)
Fixed
Mobile Satellite (S-E)
FIXED
Mobile
Satellite (S-E)
FIXED
Mobile
Satellite (S-E)
FIXED
Fixed
MOBILE
SATELLITE (S-E)
FIXED
Mobile Satellite (E-S)
EXPL.
SATELLITE (S-E)
MET.
SATELLITE (E-S)
FIXED
Mobile Satellite (E-S)
(no airborne)
Mobile Satellite
(E-S) (no airborne)
FIXED
SPACE RESEARCH (S-E)
(deep space only)
FIXED
Radiolocation
Radiolocation
Radiolocation
Meteorological Aids
Radiolocation
Radiolocation
Amateur
Radiolocation
Amateur
Amateur Satellite
FIXED
RADIO ASTRONOMY
EARTH EXPL. SATELLITE (Passive)
SPACE RESEARCH (Passive)
FIXED SATELLITE (S-E)
Grid (2 , 4)

ISM – 13.560 ± .007 MHz
137-139 SPACE RESEARCH (SPACE TO EARTH)
1850-1910 AND 1930-1990 MHzARE ALLOCA TEDTO PCS; 1910-19
IS DESIGNATED FOR UNLICENSED PCS DEVICES
Grid (2 , 5)

FIXED
AMATEUR
BROADCA
FIXE
AERONAUTICA
MARITIME
FIXE
FIXED
AERONAUTICAL
FIXED
AMATEUR SATELLITE
STANDARD FREQ. AND TI
STANDARD FREQ.
LAND MO
MARITIME
LAND MO
FIXED
RADIO AST
BROADCA
MARITIME
LAND MO
FIXED
FIXE
MOBI
FIXED
LAND M
FIXED
AMATEUR
LAND M
FIXE
FIXED
FIXE
ISM – 27.12 ± .163 MHz
30 MHz
216.0
220.0
222.0
225.0
235.0
300
TING
S 7-13)
MARITIME MOBILE
Aeronautical Mobile
LAND MOBILE
Fixed
Land Mobile
AMATEUR
Radio-location
Radiolocation
Radiolocation
Amateur
MOBILE
FIXED
MOBILE
MOBILE SATELLITE
FIXED
300 MHz
2150
2160
2200
2290
2300
2310
2360
2390
2400
2402
2417
2450
2483.5
2500
2655
2690
2700
2900
3000
MOBILE
FIXED
FIXED
MOBILE
FIXED (LOS)
MOBILE (LOS)
SPACE RESEARCH (S-E)
SPACE RESEARCH (S-E) (deep space only)
SPACE OPERATION (S-E) (s/s)
SPACE RESEARCH (S-E) (s/s)
EARTH EXPLORATION SAT. (S-E) (s/s)
MOBILE**
FIXED
Amateur
Radio-location
Mobile
BROADCASTING SATELLITE
Fixed
RADIOLOCATION
MOBILE
AMATEUR
Amateur
AMATEUR
Radiolocation
Amateur
Radiolocation
MOBILE
FIXED
RADIODETERMINATION SAT. (S-E)
MOBILE SATELLITE (S-E)
BROADCASTING SATELLITE
FIXED
Earth Exploration Sat. (Passive)
Space Research (Passive)
Radio Astronomy
BROAD-CASTING SATELLITE
FIXED
RADIO ASTRONOMY
SPACE RESEARCH (Passive)
EARTH EXPLORATION SAT. (Passive)
Radiolocation
METEOROLOGICAL AIDS
AERONAUTICAL RADIONAVIGATION
MARITIME RADIONAVIGATION
Radiolocation
)-1930 MHz
ISM – 2450.0 ± 50 MHz
3 GHz
21.2
21.4
22.0
22.21
22.5
22.55
23.0
23.55
23.6
24.0
24.05
24.25
25.25
27.0
27.5
29.5
30.0
MOBILE SATELLITE (S-E)
FIXED SATELLITE (S-E)
EARTH EXPL. Sat. (Passive)
SPACE RES. (Passive)
MOBILE
MOBILE**
EARTH EXPL. Sat. (Passive)
SPACE RESEARCH (Passive)
RADIO ASTRONOMY
MOBILE
INTER-SATELLITE
MOBILE
INTER-SATELLITE
MOBILE
EARTH EXPL. SAT. (Passive)
SPACE RES. (Passive)
AMATEUR SATELLITE
Radio-location
Amateur
RADIOLOCATION SATELLITE (E-S)
FIXED
MOBILE
MOBILE
FIXED SATELLITE (S-E)
FIXED
MOBILE
MOBILE SATELLITE (E-S)

UNITI

STATI

FREQUE

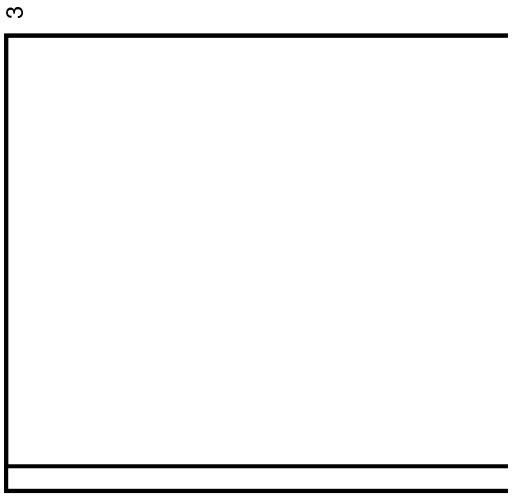
ALLOCA

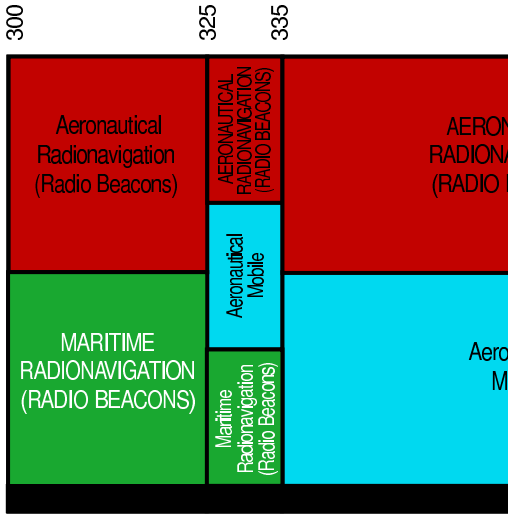
ED

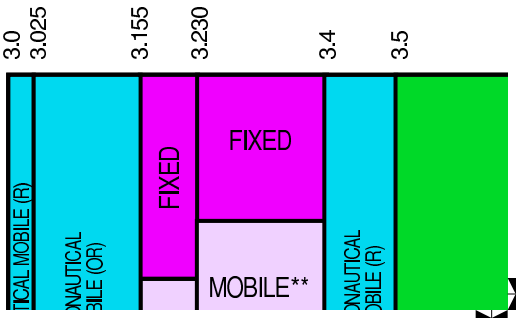
ES

ENCY

TIONS



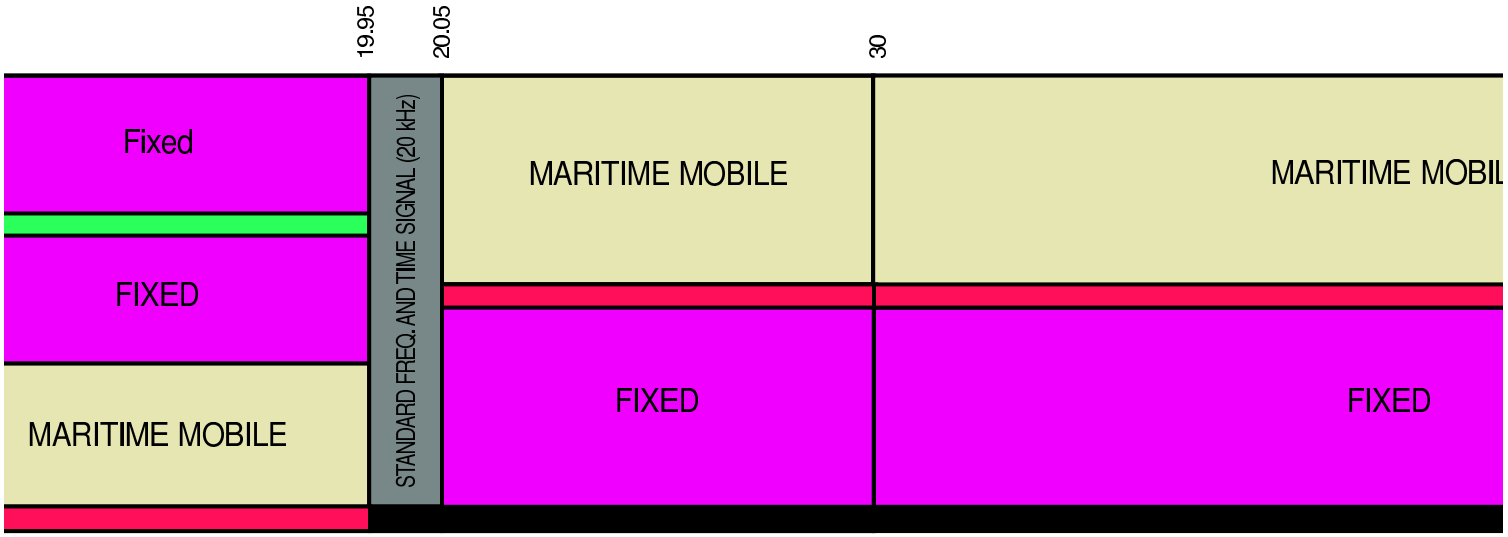


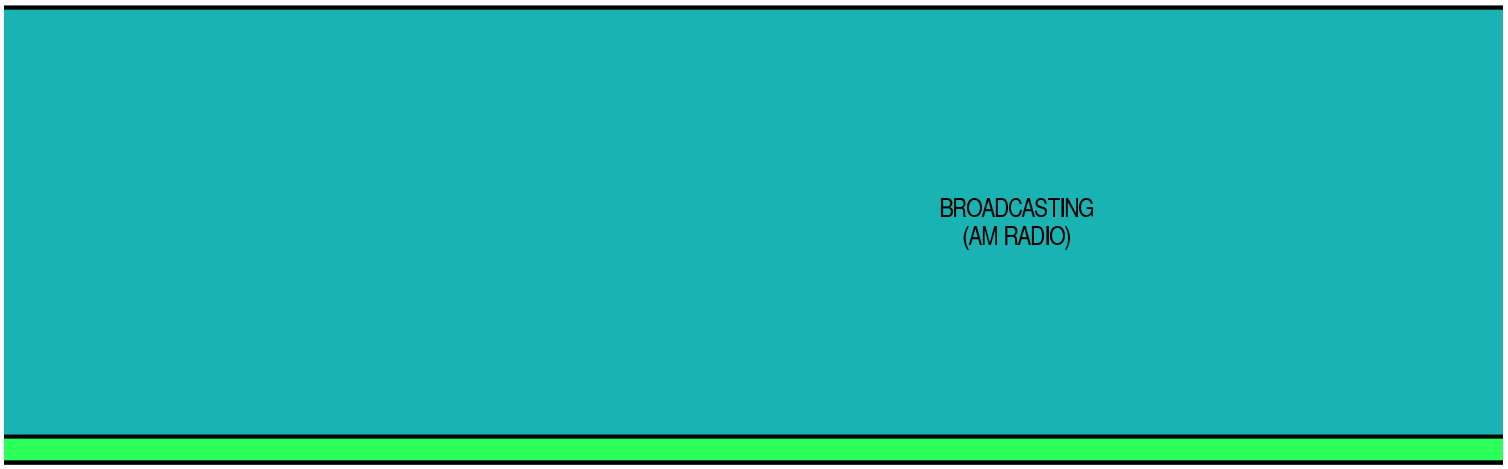


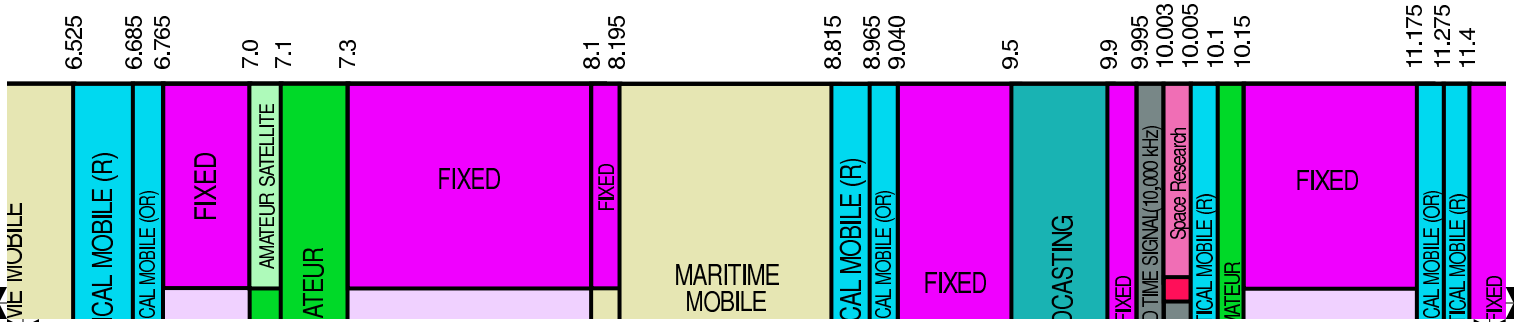
Grid (3 , 2)

9
14
NOT ALLOCATED
RADIONAVIGATION
405
415
435
495
505
510
525
535
RONAUTICAL
ONAVIGATION
IO BEACONS)
RADIONAVIGATION
MARITIME
MOBILE
Aeronautical
Radionavigation
MOBILE (DISTRESS AND CALLING)
MARITIME MOBILE
AERONAUTICAL
RADIONAVIGATION
(RADIO BEACONS)
AERONAUTICAL
RADIONAVIGATION
(RADIO BEACONS)
Aeronautical
Mobile
Aeronautical Mobile
AERONAUTICAL
RADIONAVIGATION
MARITIME
MOBILE
MARITIME
MOBILE
(SHIPS ONLY)
MOBILE
4.0
4.063
4.438
4.65
4.7
4.75
4.85
4.995
5.003
5.005
5.060
5.45
5.68
5.73
5.95
6.2
AMATEUR
FIXED
MARITIME
MOBILE
FIXED
TICAL MOBILE (R)
CAL MOBILE (OR)
FIXED
MOBILE
ND TIME SIGNAL(5000 KHZ)
Space Research
IXED
FIXED
CAL MOBILE (R)
ICAL MOBILE (OR)
FIXED
DCASTING
VE MOBILE

Grid (3 , 3)


19.95
20.05
30
Fixed
FIXED
MARITIME MOBILE
STANDARD FREQ. AND TIME SIGNAL (20 kHz)
MARITIME MOBILE
MARITIME MOBIL
FIXED
FIXED


BROADCASTING
(AM RADIO)


6.525
6.685
6.765
7.0
7.1
7.3
8.1
8.195
8.815
8.965
9.040
9.5
9.9
9.995
10.003
10.005
10.1
10.15
11.175
11.275
11.4
VILE MOBILE
ICAL MOBILE (R)
CAL MOBILE (OR)
FIXED
AMATEUR SATELLITE
ATEUR
FIXED
FIXED
MARITIME
MOBILE
CAL MOBILE (R)
CAL MOBILE (OR)
FIXED
OCASTING
-IXED
TIME SIGNAL(10,000 kHz)
Space Research
TICAL MOBILE (R)
MATEUR
FIXED
CAL MOBILE (OR)
TICAL MOBILE (R)
-IXED

TRAVELERS INFORMATION SERVICE AT 1610 kHz

160
190
200
275
285
300
FIXED
MARITIME MOBILE
AERONAUTICAL RADIONAVIGATION
Aeronautical Mobile
Maritime Radionavigation (Radio Beacons)
Aeronautical Radionavigation (Radio Beacons)
MARITIME MOBILE
FIXED
AERONAUTICAL RADIONAVIGATION
Aeronautical Mobile
MARITIME RADIONAVIGATION (RADIO BEACONS)
300 kHz
2000
2065
2107
2170
2173.5
2190.5
2194
2495
2501
2502
2505
2850
3000
MARITIME MOBILE
FIXED
MOBILE
MARITIME MOBILE (TELEPHONY)
LAND MOBILE
MOBILE (DISTRESS AND CALLING)
STANDARD FREQ. AND TIME SIGNAL(2500kHz)
Space Research
STANDARD FREQ.
STANDARD FREQ. AND TIME SIGNAL
AERONAUTICAL MOBILE (R)
3 MHz
21.0
21.45
21.85
21.924
22.0
22.855
23.0
23.2
23.35
24.89
24.99
25.005
25.01
25.07
25.21
25.33
25.55
25.67
26.1
26.175
26.48
26.95
26.96
27.23
27.41
27.54
28.0
29.7
29.8
29.89
29.91
30.0
Mobile
AMATEUR SATELLITE
BROADCASTING
FIXED
AERONAUTICAL MOBILE (R)
MARITIME MOBILE
Mobile*
AERONAUTICAL MOBILE (OR)
MOBILE**
AMATEUR
STANDARD FREQ. AND TIME SIGNAL(25,000 kHz)
Space Research
MOBILE
MARITIME MOBILE
MOBILE**
SPACE RESEARCH
ASTRONOMY
BROADCASTING
MARITIME MOBILE
MOBILE
MOBILE**
FIXED
MOBILE**
MOBILE
MOBILE
AMATEUR SATELLITE
MOBILE
FIXED
MOBILE
FIXED

Grid (3 , 6)