## Section B — Frequency Allocation Table

**902-1 215 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
|  | **902-928**FIXEDAmateurMobile except aeronautical mobile 5.325ARadiolocation5.150 5.325 5.326 |  |  |
| **928-942**FIXEDMOBILE except aeronautical mobile 5.317ARadiolocation5.325 |
| **942-960**FIXEDMOBILE except aeronautical mobile 5.317ABROADCASTING 5.3225.323 | **942-960**FIXEDMOBILE 5.317A | **942-960**FIXEDMOBILE 5.317A BROADCASTING5.320 | **942-960**FIXEDMOBILE 5.317A IND 16 IND 25 BROADCASTING5.320 |
| **960-1 164** |  |  | **960-1 164**AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 IND 12 5.328AA |
|  | AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.3285.328AA |
| **1 164-1 215** |  |  | **1 164-1 215** |
|  | AERONAUTICAL RADIONAVIGATION 5.328RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) | AERONAUTICAL RADIONAVIGATION 5.328 IND 12 RADIONAVIGATION-SATELLITE (space-to-Earth)(space-to-space) |
|  | 5.328B |  | 5.328B |
|  | 5.328A |  | 5.328A |

**1 215-1 350 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 215-1 240** |  |  | **1 215-1 240**FIXED MOBILERADIONAVIGATIONEARTH EXPLORATION-SATELLITE (active) RADIOLOCATIONRADIONAVIGATION-SATELLITE (space-to-Earth)(space-to-space)5.328B 5.329 5.329A SPACE RESEARCH (active)5.330 5.331 5.332 |
|  | EARTH EXPLORATION-SATELLITE (active) RADIOLOCATIONRADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329ASPACE RESEARCH (active)5.330 5.331 5.332 |
| **1 240-1 300** |  |  | **1 240-1 300**FIXED MOBILERADIONAVIGATIONEARTH EXPLORATION-SATELLITE (active) RADIOLOCATION IND 14RADIONAVIGATION-SATELLITE (space-to-Earth)(space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active)Amateur5.282 5.330 5.331 5.332 5.335A |
|  | EARTH EXPLORATION-SATELLITE (active) RADIOLOCATIONRADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329ASPACE RESEARCH (active)Amateur5.282 5.330 5.331 5.332 5.335 5.335A |
| **1 300-1 350** |  |  | **1 300-1 350**RADIOLOCATIONAERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A |
|  | RADIOLOCATIONAERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A |

**1 350-1 492 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 350-1 400**FIXED MOBILERADIOLOCATION5.149 5.338 5.338A 5.339 | **1 350-1 400**RADIOLOCATION 5.338A5.149 5.334 5.339 | **1 350-1 400**RADIOLOCATION 5.338A5.149 5.339 |
| **1 400-1 427** |  |  | **1 400-1 427**EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMYSPACE RESEARCH (passive)5.340 5.341 |
|  | EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMYSPACE RESEARCH (passive)5.340 5.341 |
| **1 427-1 429** |  |  | **1 427-1 429**SPACE OPERATION (Earth-to-space) FIXEDMOBILE except aeronautical mobile 5.341C IND 165.338A 5.341 |
|  | SPACE OPERATION (Earth-to-space) FIXEDMOBILE except aeronautical mobile 5.341A 5.341B 5.341C5.338A 5.341 |
| **1 429-1 452**FIXEDMOBILE except aeronautical mobile 5.341A5.338A 5.341 5.342 | **1 429-1 452**FIXEDMOBILE 5.341B 5.341C 5.3435.338A 5.341 | **1 429-1 452**FIXEDMOBILE 5.341C IND 165.338A 5.341 |
| **1 452-1 492**FIXEDMOBILE except aeronautical mobile 5.346BROADCASTING BROADCASTING-SATELLITE5.208B5.341 5.342 5.345 | **1 452-1 492**FIXEDMOBILE 5.341B 5.343 5.346A BROADCASTINGBROADCASTING-SATELLITE 5.208B5.341 5.344 5.345 | **1 452-1 492**FIXEDMOBILE 5.346A IND 16 BROADCASTINGBROADCASTING-SATELLITE 5.208B5.341 5.345 |

**1 492-1 530 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 492-1 518**FIXEDMOBILE except aeronautical mobile 5.341A5.341 5.342 | **1 492-1 518**FIXEDMOBILE 5.341B 5.3435.341 5.344 | **1 492-1 518**FIXEDMOBILE 5.341C5.341 | **1 492-1 518**FIXEDMOBILE 5.341C IND 165.341 |
| **1 518-1 525**FIXEDMOBILE except aeronautical mobileMOBILE-SATELLITE(space-to-Earth) 5.348 5.348A 5.348B 5.351A5.341 5.342 | **1 518-1 525**FIXED MOBILE 5.343MOBILE-SATELLITE(space-to-Earth) 5.348 5.348A 5.348B 5.351A5.341 5.344 | **1 518-1 525**FIXED MOBILEMOBILE-SATELLITE(space-to-Earth) 5.348 5.348A 5.348B 5.351A5.341 | **1 518-1 525**FIXED MOBILEMOBILE-SATELLITE(space-to-Earth) 5.348 5.348A 5.348B 5.351A5.341 |
| **1 525-1 530**SPACE OPERATION(space-to-Earth) FIXEDMOBILE-SATELLITE(space-to-Earth) 5.208B 5.351AEarth exploration-satellite Mobile except aeronauticalmobile 5.3495.341 5.342 5.350 5.3515.352A 5.354 | **1 525-1 530**SPACE OPERATION(space-to-Earth) MOBILE-SATELLITE(space-to-Earth) 5.208B 5.351AEarth exploration-satellite FixedMobile 5.3435.341 5.351 5.354 | **1 525-1 530**SPACE OPERATION(space-to-Earth) FIXEDMOBILE-SATELLITE(space-to-Earth) 5.208B 5.351AEarth exploration-satellite Mobile 5.3495.341 5.351 5.352A 5.354 | **1 525-1 530**SPACE OPERATION(space-to-Earth) FIXEDMOBILE-SATELLITE(space-to-Earth) 5.208B 5.351AEarth exploration-satellite Mobile5.341 5.351 5.352A 5.354 |

**1 530-1 610 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 530-1 535**SPACE OPERATION(space-to-Earth) MOBILE-SATELLITE(space-to-Earth) 5.208B 5.351A 5.353AEarth exploration-satellite FixedMobile except aeronautical mobile | **1 530-1 535**SPACE OPERATION (space-to-Earth)MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353AEarth exploration-satellite FixedMobile 5.343 | **1 530-1 535**SPACE OPERATION (space-to-Earth)MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353AEarth exploration-satellite FixedMobile |
| 5.341 5.342 5.351 5.354 | 5.341 5.351 5.354 |  | 5.341 5.351 5.354 |
| **1 535-1 559** |  |  | **1 535-1 559** |
|  | MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A | MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A |
|  | 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.3595.362A | 5.341 5.351 5.353A 5.354 5.356 5.3575.357A 5.362A |
| **1 559-1 610**AERONAUTICAL RADIONAVIGATIONRADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) | **1 559-1 610**AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) |
|  | 5.208B 5.328B 5.329A |  | (space-to-space) 5.208B 5.328B 5.329A |
|  | 5.341 |  | 5.341 |

**1 610-1 613.8 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 610-1 610.6**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATION.341 5.355 5.359 5.3645.366 5.367 5.368 5.3695.371 5.372 | **1 610-1 610.6**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATION RADIODETERMINATION­SATELLITE(Earth-to-space)5.341 5.364 5.366 5.3675.368 5.370 5.372 | **1 610-1 610.6**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONRadiodetermination-satellite (Earth-to-space)5.341 5.355 5.359 5.364 5.3665.367 5.368 5.369 5.372 | **1 610-1 610.6**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATION RADIODETERMINATION-SATELLITE(Earth-to-space)5.341 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 AERONAUTICALRADIONAVIGATION5.149 5.341 5.355 5.359 5.3645.366 5.367 5.368 5.3695.371 5.372 | **1 610.6-1 613.8**MOBILE-SATELLITE(Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICALRADIONAVIGATION RADIODETERMINATIONSATELLITE (Earth-to-space) 5.149 5.341 5.364 5.3665.367 5.368 5.370 5.372 | **1 610.6-1 613.8**MOBILE-SATELLITE(Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICALRADIONAVIGATIONRadiodetermination-satellite (Earth-to-space)5.149 5.341 5.355 5.359 5.3645.366 5.367 5.368 5.369 5.372 | **1 610.6-1 613.8**MOBILE-SATELLITE(Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICALRADIONAVIGATION RADIODETERMINATION-SATELLITE(Earth-to-space)5.149 5.341 5.364 5.366 5.367 5.368 5.369 5.372 |

**1 613.8-1 626.5 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 613.8- 1621.35**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) 5.208B5.341 5.355 5.359 5.364 5.3655.366 5.367 5.368 5.3695.371 5.372 5.372A | **1 613.8-1621.35**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATION RADIODETERMINATION­SATELLITE(Earth-to-space)Mobile-satellite (space-to-Earth) 5.208B5.341 5.364 5.365 5.3665.367 5.368 5.370 5.372 5.372A | **1 613.8-1621.35**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) 5.208BRadiodetermination-satellite (Earth-to-space)5.341 5.355 5.359 5.364 5.3655.366 5.367 5.368 5.3695.372 5.372A | **1 613.8-1621.35**MOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) 5.208BRadiodetermination-satellite (Earth-to-space)5.341 5.364 5.365 5.366 5.367 5.368 5.369 5.372 5.372A |
| **1621.35-1626.5**MARITIME MOBILE­SATELLITE (space-to-Earth) 5.373 5.373AMOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-earth)5.208B 5.341 5.355 5.3595.364 5.365 5.366 5.367 5.368 | **1621.35-1626.5**MARITIME MOBILE­SATELLITE (space-to-Earth) 5.373 5.373AMOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATION RADIODETERMINATION­SATELLITE (Earth-to-space) Mobile-satellite(space-to-Earth)except maritime mobile satellite (space-to-earth)5.208B 5.341 5.364 5.365 | **1621.35-1626.5**MARITIME MOBILE­SATELLITE (space-to-Earth) 5.373 5.373AMOBILE-SATELLITE(Earth-to-space) 5.351A AERONAUTICALRADIONAVIGATIONMobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-earth)Radiodetermination-satellite (Earth-to-space)5.208B 5.341 5.355 5.3595.364 5.365 5.366 5.367 5.368 | **1621.35-1626.5**MARITIME MOBILE­SATELLITE (space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATIONMobile-satellite(space-to-Earth)except maritime mobile satellite (space-to-earth) Radiodetermination-satellite (Earth-to-space)5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.369 |

5.372

5.369 5.371 5.372 5.366 5.367 5.368 5.370 5.372 5.369 5.372

|  |
| --- |
| **1 626.5-1 668 MHz** |
| **Allocation to Radiocommunication Services** |
| **1 626.5-1 660** | **1 626.5-1 660**MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.357A5.362A 5.374 5.375 5.376 |
| MOBILE-SATELLITE (Earth-to-space) 5.351A5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.3745.375 5.376 |
| **1 660-1 660.5** | **1 660-1 660.5**MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY5.149 5.341 5.351 5.354 5.362A 5.376A |
| MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY5.149 5.341 5.351 5.354 5.362A 5.376A |
| **1 660.5-1 668** | **1 660.5-1 668**RADIO ASTRONOMYSPACE RESEARCH (passive) FixedMobile except aeronautical mobile Meteorological aids 5.3795.149 5.341 5.379A |
| RADIO ASTRONOMYSPACE RESEARCH (passive) FixedMobile except aeronautical mobile5.149 5.341 5.379 5.379A |

**1 668-1 675 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 668-1 668.4** |  |  | **1 668-1 668.4**MOBILE-SATELLITE (Earth-to-space) 5.379CRADIO ASTRONOMYSPACE RESEARCH (passive) FixedMobile except aeronautical mobile Meteorological aids 5.3795.149 5.341 5.379A | 5.351A 5.379B |
|  | MOBILE-SATELLITE (Earth-to-space)RADIO ASTRONOMYSPACE RESEARCH (passive) FixedMobile except aeronautical mobile5.149 5.341 5.379 5.379A | 5.351A 5.379B 5.379C |
| **1 668.4-1 670** |  |  | **1 668.4-1 670** |  |
|  | METEOROLOGICAL AIDS |  | METEOROLOGICAL AIDS |  |
| FIXED |  | FIXED |  |
| MOBILE except aeronautical mobile |  | MOBILE except aeronautical mobile |  |
| MOBILE-SATELLITE (Earth-to-space) | 5.351A 5.379B 5.379C | MOBILE-SATELLITE (Earth-to-space) | 5.351A 5.379B |
|  |  | 5.379C |  |
| RADIO ASTRONOMY |  | RADIO ASTRONOMY |  |
| 5.149 | 5.341 | 5.379D 5.379E |  |  | 5.149 | 5.341 | 5.379D 5.379E |  |
| **1 670-1 675** |  |  | **1 670-1 675** |
|  | METEOROLOGICAL AIDS | METEOROLOGICAL AIDS |
| FIXED | FIXED |
| METEOROLOGICAL-SATELLITE (space-to-Earth) | METEOROLOGICAL-SATELLITE (space-to-Earth) |
| MOBILE | MOBILE |
| MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B | MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B |
| 5.341 5.379D 5.379E 5.380A | 5.341 5.379D 5.379E 5.380A |

**1 675-1 710 MHz**

|  |  |
| --- | --- |
| **Allocation to Radiocommunication Services** |  |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 675-1 690** |  | **1 675-1 690** |
|  | METEOROLOGICAL AIDS | METEOROLOGICAL AIDS |
|  | FIXED | FIXED |
|  | METEOROLOGICAL-SATELLITE (space-to-Earth) | METEOROLOGICAL-SATELLITE (space-to-Earth) |
|  | MOBILE except aeronautical mobile | MOBILE except aeronautical mobile |
|  | 5.341 | 5.341 |
| **1 690-1 700** | **1690-1 700** | **1690-1 700** |
| METEOROLOGICAL AIDS | METEOROLOGICAL AIDS | FIXED 5.381 |
| METEOROLOGICAL | METEOROLOGICAL-SATELLITE (space-to-Earth) | MOBILE except aeronautical mobile 5.381 |
| SATELLITE (space-to-Earth) |  | METEOROLOGICAL AIDS |
| Fixed |  | METEOROLOGICAL-SATELLITE (space-to-Earth) |
| Mobile except aeronautical mobile |  |  |
| 5.289 5.341 5.382 | 5.289 5.341 5.381 | 5.289 5.341 |
| **1 700-1 710**FIXEDMETEOROLOGICAL-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile5.289 5.341 | **1 700-1 710**FIXED METEOROLOGICALSATELLITE (space-to-Earth)MOBILE except aeronautical mobile5.289 5.341 5.384 | **1 700-1 710**FIXED METEOROLOGICALSATELLITE (space-to-Earth) MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth)5.289 5.341 5.384 |

**1 710-2 010 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **1 710-1 930** |  |  | **1 710-1 750** |
|  | FIXED | FIXED |
| MOBILE 5.384A 5.388A  | MOBILE 5.384A 5.388A IND 16 |
|  | 5.149 5.341 5.385 |
|  | **1 750-1 850** |
|  | FIXED |
|  | MOBILE 5.384A 5.388A IND 16 |
|  | SPACE OPERATION (Earth-to-space) 5.386 |
|  | SPACE RESEARCH (Earth-to-space) 5.386 |
|  | 5.149 5.341 5.385 |
|  | **1 850-1 930** |
|  | FIXED |
|  | MOBILE 5.384A 5.388A IND 16 |
| 5.149 5.341 5.385 5.386 5.387 5.388 | 5.149 5.341 5.385 5.388 |
| **1 930-1 970** | **1 930-1 970** | **1 930-1 970** | **1 930-1 970** |
| FIXED | FIXED | FIXED | FIXED |
| MOBILE 5.388A  | MOBILE 5.388A  | MOBILE 5.388A  | MOBILE 5.388A IND 16 |
|  | Mobile-satellite (Earth-to-space) |  |  |
| 5.388 | 5.388 | 5.388 | 5.388 |
| **1 970-1 980** |  |  | **1 970-1 980** |
|  | FIXED |  | FIXED |
| MOBILE 5.388A  | MOBILE 5.388A IND 16 |
| 5.388 | 5.388 |
| **1 980-2 010** |  |  | **1 980-2 010** |
|  | FIXED |  | FIXED |
| MOBILE |  | MOBILE IND 16 |
| MOBILE-SATELLITE (Earth-to-space) | 5.351A | MOBILE-SATELLITE (Earth-to-space) 5.351A |
| 5.388 5.389A 5.389B 5.389F |  | 5.388 5.389A |

**2 010-2 170 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 010-2 025** | **2 010-2 025** | **2 010-2 025** | **2 010-2 025** |
| FIXED | FIXED | FIXED | FIXED |
| MOBILE 5.388A  | MOBILE | MOBILE 5.388A  | MOBILE 5.388A IND 16 |
|  | MOBILE-SATELLITE |  |  |
|  | (Earth-to-space) |  |  |
| 5.388 | 5.388 5.389C 5.389E | 5.388 | 5.388 |
| **2 025-2 110** |  |  | **2 025-2 110**SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space)(space-to-space) FIXEDMOBILE 5.391 IND 16SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392 |
|  | SPACE OPERATION (Earth-to-space) (space-to-space)EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXEDMOBILE 5.391SPACE RESEARCH (Earth-to-space) (space-to-space) |
| 5.392 |
| **2 110-2 120** |  |  | **2 110-2 120** |
|  | FIXED | FIXED |
| MOBILE 5.388A  | MOBILE 5.388A IND 16 |
| SPACE RESEARCH (deep space) (Earth-to-space) | SPACE RESEARCH (deep space) (Earth-to-space) |
| 5.388 | 5.388 |
| **2 120-2 160** | **2 120-2 160** | **2 120-2 160** | **2 120-2 170** |
| FIXED | FIXED | FIXED | FIXED |
| MOBILE 5.388A  | MOBILE 5.388A  | MOBILE 5.388A  | MOBILE 5.388A IND 16 |
|  | Mobile-satellite (space-to-Earth) |  |  |
| 5.388 | 5.388 | 5.388 |  |
|  | 5.388 |

**2 160-2 300 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 160-2 170** | **2 160-2 170** | **2 160-2 170** |  |
| FIXED | FIXED | FIXED |
| MOBILE 5.388A  | MOBILE | MOBILE 5.388A  |
|  | MOBILE-SATELLITE |  |
|  | (space-to-Earth) |  |
| 5.388 | 5.388 5.389C 5.389E | 5.388 |
| **2 170-2 200** |  |  | **2 170-2 200** |
|  | FIXED | FIXED |
| MOBILE | MOBILE IND 16 |
| MOBILE-SATELLITE (space-to-Earth) 5.351A | MOBILE-SATELLITE (space-to-Earth) 5.351A |
| 5.388 5.389A 5.389F | 5.388 5.389A |
| **2 200-2 290** |  |  | **2 200-2 290**SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth)(space-to-space) IND 15 FIXEDMOBILE 5.391SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392 |
|  | SPACE OPERATION (space-to-Earth) (space-to-space)EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) |
| FIXED MOBILE 5.391SPACE RESEARCH (space-to-Earth) (space-to-space)5.392 |
| **2 290-2 300** |  |  | **2 290-2 300**FIXEDMOBILE except aeronautical mobileSPACE RESEARCH (deep space) (space-to-Earth) IND 15 |
|  | FIXEDMOBILE except aeronautical mobileSPACE RESEARCH (deep space) (space-to-Earth) |

**2 300-2 483.5 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 300-2 450** | **2 300-2 450** |  | **2 300-2 310** |
| FIXED | FIXED |  | FIXED |
| MOBILE 5.384A | MOBILE 5.384A |  | MOBILE 5.384A IND 16 |
| Amateur | RADIOLOCATION |  | RADIOLOCATION |
| Radiolocation | Amateur |  | Amateur |
|  |  |  | 5.150 5.282 |
|  |  |  | **2 310-2 360** |
|  |  |  | FIXED |
|  |  |  | MOBILE 5.384A IND 16 |
|  |  |  | BROADCASTING-SATELLITE (sound) 5.393 |
|  |  |  | BROADCASTING 5.393 |
|  |  |  | RADIOLOCATION |
|  |  |  | Amateur |
|  |  |  | 5.150 5.282 5.393 |
|  |  |  | **2 360-2 450** |
|  |  |  | FIXED |
|  |  |  | MOBILE 5.384A IND 16 |
|  |  |  | RADIOLOCATION |
|  |  |  | Amateur |
| 5.150 5.282 5.395 | 5.150 5.282 5.393 | 5.394 | 5.150 5.282 |
| **2 450-2 483.5** | **2 450-2 483.5** | **2 450-2 483.5** |
| FIXED | FIXED | FIXED |
| MOBILE | MOBILE | MOBILE |
| Radiolocation | RADIOLOCATION | RADIOLOCATION |
| 5.150 | 5.150 | 5.150 |

**2 483.5-2 500 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 483.5-2 500**FIXED MOBILEMOBILE-SATELLITE(space-to-Earth) 5.351A RADIODETERMINATION­SATELLITE(space-to-Earth) 5.398 Radiolocation 5.398A5.150 5.368 5.372A 5.399 5.401 5.402 | **2 483.5-2 500**FIXED MOBILEMOBILE-SATELLITE(space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION­SATELLITE(space-to-Earth) 5.3985.150 5.368 5.372A 5.402 | **2 483.5-2 500**FIXED MOBILEMOBILE-SATELLITE(space-to-Earth) 5.351A RADIOLOCATION RADIODETERMINATION­SATELLITE(space-to-Earth) 5.3985.150 5.368 5.372A 5.401 5.402 | **2 483.5-2 500**FIXED MOBILEMOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATIONRADIODETERMINATION- SATELLITE (space-to-Earth) 5.3985.150 5.368 5.372A 5.401 5.402 |

**2 500-2 520 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 500-2 520**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409A5.412 | **2 500-2 520**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415MOBILE except aeronautical mobile 5.384A 5.409A | **2 500-2 520**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415MOBILE except aeronautical mobile 5.384A 5.409AMOBILE-SATELLITE (space-to- Earth) 5.351A 5.407 5.414 5.414A5.404 5.415A | **2 500-2 515**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A 5.409A IND 16 MOBILE-SATELLITE (space-to-Earth) 5.351A 5.407 5.414 5.414A RADIODETERMINATION- SATELLITE (space-to-Earth) 5.404 |
| **2 515-2 516.5**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A 5.409A IND 16 MOBILE-SATELLITE (space-to-Earth) 5.351A 5.407 5.414 5.414A AERONAUTICAL MOBILE-SATELLITE (space-to- Earth)5.415ARADIODETERMINATION- SATELLITE (space-to- Earth) 5.404 |
| **2 516.5-2 520**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A 5.409A IND 16 MOBILE-SATELLITE (space-to-Earth) 5.351A 5.407 5.414 5.414A AERONAUTICAL MOBILE-SATELLITE (space-to- Earth)5.415A |

**2 520-2 655 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 520-2 655**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409ABROADCASTING-SATELLITE 5.413 5.4165.339 5.412 5.418B 5.418C | **2 520-2 655**FIXED 5.410 FIXED-SATELLITE(space-to-Earth) 5.415 MOBILE except aeronauticalmobile 5.384A 5.409A BROADCASTING-SATELLITE5.413 5.4165.339 5.418B 5.418C | **2 520-2 535**FIXED 5.410 FIXED-SATELLITE(space-to-Earth) 5.415 MOBILE except aeronauticalmobile 5.384A 5.409A BROADCASTING-SATELLITE5.413 5.4165.403 5.414A 5.415A | **2 520-2 535**FIXED 5.410FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A 5.409A IND 16 BROADCASTING-SATELLITE 5.413 5.416AERONAUTICAL MOBILE-SATELLITE (space-to-Earth) 5.415A5.403 5.414A 5.415A |
| **2 535-2 655**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409A BROADCASTING-SATELLITE5.413 5.4165.339 5.418 5.418A 5.418B5.418C | **2 535-2 655**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409A IND 16BROADCASTING-SATELLITE 5.413 5.4165.339 5.418 5.418A 5.418B5.418C IND 26 |

**2 655-2 690 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 655-2 670**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409ABROADCASTING-SATELLITE 5.208B 5.413 5.416Earth exploration-satellite (passive)Radio astronomySpace research (passive)5.149 5.412 | **2 655-2 670**FIXED 5.410 FIXED-SATELLITE(Earth-to-space)(space-to-Earth) 5.415 MOBILE except aeronauticalmobile 5.384A 5.409A BROADCASTING-SATELLITE5.413 5.416Earth exploration-satellite (passive)Radio astronomySpace research (passive) 5.149 5.208B | **2 655-2 670**FIXED 5.410 FIXED-SATELLITE(Earth-to-space) 5.415 MOBILE except aeronauticalmobile 5.384A BROADCASTING-SATELLITE5.208B 5.413 5.416Earth exploration-satellite (passive)Radio astronomySpace research (passive)5.149 5.420 | **2 655-2 670**FIXED 5.410FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A IND 16 BROADCASTING-SATELLITE 5.208B 5.413 5.416Earth exploration-satellite (passive) Radio astronomySpace research (passive)5.149 5.420 |
| **2 670-2 690**FIXED 5.410MOBILE except aeronautical mobile 5.384A 5.409AEarth exploration-satellite (passive)Radio astronomySpace research (passive)5.149 5.412 | **2 670-2 690**FIXED 5.410 FIXED-SATELLITE(Earth-to-space)(space-to-Earth) 5.208B 5.415 MOBILE except aeronauticalmobile 5.384A 5.409AEarth exploration-satellite (passive)Radio astronomySpace research (passive)5.149 | **2 670-2 690**FIXED 5.410 FIXED-SATELLITE(Earth-to-space) 5.415 MOBILE except aeronauticalmobile 5.384A MOBILE-SATELLITE(Earth-to-space) 5.351A 5.419 Earth exploration-satellite(passive) Radio astronomySpace research (passive)5.149 | **2 670-2 690**FIXED 5.410FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A IND 16MOBILE-SATELLITE (Earth-to-space) 5.351A 5.419Earth exploration-satellite (passive) Radio astronomySpace research (passive)5.149 |

**2 690-3 400 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **2 690-2 700** |  |  | **2 690-2 700**EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMYSPACE RESEARCH (passive)5.340 |
|  | EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMYSPACE RESEARCH (passive)5.340 5.422 |
| **2 700-2 900** |  |  | **2 700-2 900**AERONAUTICAL RADIONAVIGATION 5.337Radiolocation5.423 IND 27 |
|  | AERONAUTICAL RADIONAVIGATION 5.337Radiolocation 5.423 5.424 |
| **2 900-3 100** |  |  | **2 900-3 100**RADIOLOCATION 5.424A RADIONAVIGATION 5.4265.425 5.427 |
|  | RADIOLOCATION 5.424A RADIONAVIGATION 5.4265.425 5.427 |  |
| **3 100-3 300** |  |  | **3 100-3 300**RADIOLOCATIONEarth exploration-satellite (active) Space research (active)5.149 |
|  | RADIOLOCATIONEarth exploration-satellite (active) Space research (active)5.149 5.428 |  |
| **3 300-3 400**RADIOLOCATION5.149 5.429 5.429A 5.429B5.430 | **3 300-3 400**MOBILE except aeronautical mobile 5.429GRADIOLOCATIONAmateur Fixed 5.149 5.429C 5.429D | **3 300-3 400**RADIOLOCATIONAmateur5.149 5.429 5.429E 5.429F | **3 300-3 400**FIXEDMOBILE IND 16 RADIOLOCATIONAmateur5.149 5.429 5.429E 5.429F |

**3 400-4 200 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **3 400-3 600**FIXEDFIXED-SATELLITE(space-to-Earth)MOBILE except aeronautical mobile 5.430ARadiolocation5.431 | **3 400-3 500**FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile 5.431A 5.431BAmateur Radiolocation 5.4335.282 | **3 400-3 500**FIXEDFIXED-SATELLITE (space-to-Earth) AmateurMobile 5.432 5.432BRadiolocation 5.4335.282 5.432A | **3 400-3 500**FIXEDFIXED-SATELLITE (space-to- Earth)MOBILE except aeronautical mobile 5.432B IND 16 AmateurRadiolocation 5.4335.282 5.432A |
| **3 500-3 600**FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile 5.431BRadiolocation 5.433 | **3 500-3 600**FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile 5.433ARadiolocation 5.433 | **3 500-3 600**FIXEDFIXED-SATELLITE (space-to-Earth)MOBILE except aeronautical mobile 5.433A IND 16 Radiolocation 5.433 |
| **3 600- 3 800**FIXEDFIXED-SATELLITE (space­to-Earth) MOBILE except aeronautical mobile 5.433B 5.434A 5.434B 5.435A | **3 600-3 700**FIXEDFIXED-SATELLITE (space­to-Earth)MOBILE except aeronautical mobile 5.434Radiolocation 5.433 | **3 600-3 700**FIXEDFIXED-SATELLITE (space­to-Earth)MOBILE except aeronautical mobileRadiolocation5.435 | **3 600-3 700**FIXEDFIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile IND 16 Radiolocation |
| **3 700-4 200**FIXEDFIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.435B | **3 700-4 200**FIXEDFIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.435B |
| **3 800-4 200**FIXEDFIXED-SATELLITE (space-to-Earth)Mobile |

**4 200-5 010 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **4 200-4 400** |  |  | **4 200-4 400**AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.4385.437 5.440 |
|  | AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.4385.437 5.439 5.440 |
| **4 400-4 500** |  |  | **4 400-4 500**FIXEDMOBILE 5.440A |
|  | FIXEDMOBILE 5.440A |  |
| **4 500-4 800** |  |  | **4 500-4 800**FIXEDFIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A |
|  | FIXEDFIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A |
| **4 800-4 990** |  |  | **4 800-4 990**FIXEDMOBILE IND 18Radio astronomy 5.149 5.339 |
|  | FIXEDMOBILE 5.440A 5.441A 5.441B 5.442Radio astronomy 5.149 5.339 5.443 |
| **4 990-5 000** |  |  | **4 990-5 000**FIXEDMOBILE except aeronautical mobile RADIO ASTRONOMYSpace research (passive)5.149 |
|  | FIXEDMOBILE except aeronautical mobile RADIO ASTRONOMYSpace research (passive)5.149 |  |
| **5 000-5 010** |  |  | **5 000-5 010**AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION **IND 12**RADIONAVIGATION-SATELLITE (Earth-to-space) |
|  | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATIONRADIONAVIGATION-SATELLITE (Earth-to-space) |

**5 010-5 150 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **5 010-5 030** |  |  | **5 010-5 030** |
|  | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATIONRADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION **IND 12** RADIONAVIGATION-SATELLITE (space-to-Earth)(space-to-space) |
|  | 5.328B 5.443B |  | 5.328B 5.443B |
| **5 030-5 091** |  |  | **5 030-5 091**AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION **IND 12**5.444 |
|  | AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION5.444 |
| **5 091-5 150** |  |  | **5 091-5 150** |
|  | FIXED-SATELLITE (Earth-to-space) 5.444AAERONAUTICAL MOBILE 5.444B | FIXED-SATELLITE (Earth-to-space) 5.444AAERONAUTICAL MOBILE 5.444B |
|  | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION5.444 | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION **IND 12**5.444 |

**5 150-5 350 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **5 150-5 250** |  |  | **5 150-5 216**FIXED-SATELLITE (Earth-to-space) 5.447AMOBILE except aeronautical mobile 5.446A 5.446B IND 28AERONAUTICAL RADIONAVIGATION **IND 12**RADIODETERMINATION- SATELLITE (space-to-Earth) 5.446 5.447B 5.447C |
|  | FIXED-SATELLITE (Earth-to-space) 5.447AMOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION5.446 5.446C 5.446D 5.447 5.447B 5.447C |
| **5 216-5 250**FIXED-SATELLITE (Earth-to-space) 5.447AMOBILE except aeronautical mobile 5.446A 5.446B IND 28AERONAUTICAL RADIONAVIGATION **IND 12**5.447B 5.447C |
| **5 250-5 255** |  |  | **5 250-5 255**FIXED 5.447EEARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.447F IND 28RADIOLOCATIONSPACE RESEARCH 5.447D 5.448A |
|  | EARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATIONSPACE RESEARCH 5.447D5.447E 5.448 5.448A |
| **5 255-5 350** |  |  | **5 255-5 350**FIXED 5.447EEARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.447F IND 28RADIOLOCATIONSPACE RESEARCH (active) 5.448A |
|  | EARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATIONSPACE RESEARCH (active)5.447E 5.448 5.448A |

**5 350-5 650 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **5 350-5 460** |  |  | **5 350-5 460** |
|  | EARTH EXPLORATION-SATELLITE (active) 5.448BRADIOLOCATION 5.448D | EARTH EXPLORATION-SATELLITE (active) 5.448BRADIOLOCATION 5.448D |
|  | AERONAUTICAL RADIONAVIGATION 5.449SPACE RESEARCH (active) 5.448C | AERONAUTICAL RADIONAVIGATION 5.449 SPACE RESEARCH (active) 5.448CIND 28 |
| **5 460-5 470** |  |  | **5 460-5 470**EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449SPACE RESEARCH (active)5.448B IND 28 |
|  | EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D RADIONAVIGATION 5.449SPACE RESEARCH (active)5.448B |
| **5 470-5 570** |  |  | **5 470-5 570**EARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.450A IND 28RADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active)5.448B |
|  | EARTH EXPLORATION-SATELLITE (active)MOBILE except aeronautical mobile 5.446A 5.450ARADIOLOCATION 5.450B MARITIME RADIONAVIGATION SPACE RESEARCH (active)5.448B 5.450 5.451 |
| **5 570-5 650** |  |  | **5 570-5 650**MOBILE except aeronautical mobile 5.446A 5.450A IND 28RADIOLOCATION 5.450B MARITIME RADIONAVIGATION5.452 |
|  | MOBILE except aeronautical mobile 5.446A 5.450ARADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.450 5.451 5.452 |

**5 650-5 925 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **5 650-5 725** |  |  | **5 650-5 725**FIXED 5.453MOBILE except aeronautical mobile 5.446A 5.450A IND 28RADIOLOCATIONAmateurSpace research (deep space) 5.282 |
|  | MOBILE except aeronautical mobile 5.446A 5.450ARADIOLOCATIONAmateurSpace research (deep space)5.282 5.451 5.453 5.454 5.455 |
| **5 725-5 830**FIXED-SATELLITE(Earth-to-space) RADIOLOCATIONAmateur5.150 5.451 5.453 5.455 | **5725-5 830**RADIOLOCATIONAmateur5.150 5.453 5.455 | **5725-5 830**FIXED 5.453MOBILE 5.453 IND 28 RADIOLOCATIONAmateur5.150 |
| **5 830-5 850**FIXED-SATELLITE(Earth-to-space) RADIOLOCATIONAmateurAmateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 | **5 830-5 850**RADIOLOCATIONAmateurAmateur-satellite (space-to-Earth)5.150 5.453 5.455 | **5 830-5 850**FIXED 5.453MOBILE IND 28 RADIOLOCATIONAmateurAmateur-satellite (space-to-Earth) 5.150 |
| **5 850-5 925**FIXEDFIXED-SATELLITE(Earth-to-space) MOBILE5.150 | **5 850-5 925**FIXEDFIXED-SATELLITE(Earth-to-space) MOBILEAmateur Radiolocation5.150 | **5 850-5 925**FIXEDFIXED-SATELLITE(Earth-to-space) MOBILERadiolocation5.150 | **5 850-5 925**FIXEDFIXED-SATELLITE (Earth-to-space) MOBILE IND 28 IND 29Radiolocation5.150 |

**5 925-7 235 MHz**

|  |
| --- |
| **Allocation to Radiocommunication Services** |
| **Region 1** | **Region 2** | **Region 3** | **India** |
| **5 925-6 700** |  |  | **5 925-6 700**FIXED 5.457FIXED-SATELLITE (Earth-to-space) 5.457A 5.457BMOBILE 5.457C 5.457D 5.457E 5.457F5.149 5.440 5.458 |
|  | FIXED 5.457FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.457D 5.457E 5.457F5.149 5.440 5.458 |
| **6 700-7 075** |  |  | **6 700-7 075**FIXEDFIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441MOBILE 5.457E5.458 5.458A 5.458B |
|  | FIXEDFIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441MOBILE 5.458 5.458A 5.458B |
| **7 075-7 145** |  |  | **7 075-7 145**FIXED MOBILE 5.457E5.458 |
|  | FIXED MOBILE5.458 5.459 |  |
| **7 145-7 190** |  |  | **7 145-7 190**FIXED MOBILESPACE RESEARCH (deep space) (Earth-to-space)5.458 |
|  | FIXED MOBILESPACE RESEARCH (deep space) (Earth-to-space)5.458 5.459 |
| **7 190-7 235** |  |  | **7 190-7 235** |
|  | EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460BFIXEDMOBILE | EARTH EXPLORATION-SATELLITE (Earth-to-space) 5.460A 5.460BFIXEDMOBILE |
|  | SPACE RESEARCH (Earth-to-space) 5.4605.458 5.459 | SPACE RESEARCH (Earth-to-space) 5.4605.458 |

## Section 3C –Footnotes to the Table of Frequency Allocations in the Radio Regulations

* 1. *Different category of service*: in Australia, the allocation of the band 915-928 MHz to the radiolocation service is on a primary basis (see No. 5.33).
	2. **A** The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **417 (Rev.WRC-15)**. (WRC-15)
	3. The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities. (WRC-2000)

**5.328A** Stations in the radionavigation-satellite service in the band 1 164-1 215 MHz shall operate in accordance with the provisions of Resolution **609 (Rev.WRC-07)** and shall not claim protection from stations in the aeronautical radionavigation service in the band 960-1 215 MHz. No. **5.43A** does not apply. The provisions of No. **21.18** shall apply. (WRC-07)

**5.328AA** The frequency band 1 087.7-1 092.3 MHz is also allocated to the aeronautical mobile-satellite (R) service (Earth-to-space) on a primary basis, limited to the space station reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft transmitters that operate in accordance with recognized international aeronautical standards. Stations operating in the aeronautical mobile-satellite (R) service shall not claim protection from stations operating in the aeronautical radionavigation service. Resolution **425 (Rev.WRC-19)** shall apply. (WRC-19)

* 1. **B** The use of the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz by systems and networks in the radionavigation-satellite service for which complete coordination or notification information, as appropriate, is received by the Radiocommunication Bureau after 1 January 2005 is subject to the application of the provisions of Nos. **9.12**, **9.12A** and **9.13**. Resolution **610 (WRC-03)**\* shall also apply; however, in the case of radionavigation-satellite service (space-to-space) networks and systems, Resolution **610 (WRC-03)**\* shall only apply to transmitting space stations. In accordance with No. **5.329A**, for systems and networks in the radionavigation­ satellite service (space-to-space) in the bands 1 215-1 300 MHz and 1 559-1 610 MHz, the provisions of Nos. **9.7**, **9.12**, **9.12A** and **9.13** shall only apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space). (WRC-07)
	2. Use of the radionavigation-satellite service in the frequency band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. **5.331**. Furthermore, the use of the radionavigation-satellite service in the frequency band 1 215­ 1 300 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. No. **5.43** shall not apply in respect of the radiolocation service. Resolution **608 (Rev.WRC-19)** shall apply. (WRC-19)
	3. **A** Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on radionavigation-satellite service (space-to-Earth) systems or on other services operating in accordance with the Table of Frequency Allocations. (WRC-07)
	4. *Additional allocation:* in Angola, Saudi Arabia, Bahrain, Bangladesh, Cameroon, China, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Nepal, Oman, Pakistan, Palestine\*\*, the Philippines, Qatar, the Syrian Arab Republic, Somalia, Sudan,
* *Note by the Secretariat:* This Resolution was revised by WRC-19.

\*\* Pursuant to Resolution 99 (Rev. Dubai, 2018) of the Plenipotentiary Conference and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.South Sudan, Chad, Togo and Yemen, the frequency band 1 215-1 300 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-23)

* 1. *Additional allocation:* in Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brazil, Burkina Faso, Burundi, Cameroon, China, Korea (Rep. of), Croatia, Denmark, Djibouti, Egypt, the United Arab Emirates, Estonia, the Russian Federation, Finland, France, Ghana, Greece, Guinea, Equatorial Guinea, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Jordan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Madagascar, Mali, Mauritania, Montenegro, Nigeria, Norway, Oman, Pakistan, Palestine\*, the Kingdom of the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Türkiye, Dem. People’s Rep. of Korea, Slovakia, the United Kingdom, Serbia, Slovenia, Somalia, Sudan, South Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Thailand, Togo, Turkey, Venezuela and Viet Nam, the frequency band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis. In Canada and the United States, the frequency band 1 240-1 300 MHz is also allocated to the radionavigation service, and use of the radionavigation service shall be limited to the aeronautical radionavigation service. (WRC-23)
	2. In the band 1 215**-**1 260 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-2000)

**5.332A** Administrations authorizing operation of the amateur and amateur-satellite services in the frequency band 1 240-1 300 MHz, or portions thereof, shall ensure that the amateur and amateur-satellite services do not cause harmful interference to radionavigation-satellite service (space-to-Earth) receivers in accordance with No. 5.29 (see the most recent version of Recommendation ITU-R M.2164). The authorizing administration, upon receipt of a report of harmful interference caused by a station of the amateur or amateur-satellite services, shall take all necessary steps to rapidly eliminate such interference. (WRC-23)

* 1. (SUP - WRC-97)
	2. *Additional allocation:* in Canada and the United States, the band 1 350-1 370 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-03)
	3. In Canada and the United States in the band 1 240-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause interference to, claim protection from, or otherwise impose constraints on operation or development of the aeronautical radionavigation service. (WRC-97)
	4. **A** In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)
	5. Not used.
	6. The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.
	7. **A** The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service. (WRC-2000)
	8. In Kyrgyzstan, Slovakia and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz. (WRC-12)

**5.338A** In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 24.25-27.5 GHz, 30­

31.3 GHz, 49.7-50.2 GHz, 50.4-50.9 GHz, 51.4-52.4 GHz, 52.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution

**750 (Rev.WRC-19)** applies. (WRC-19)

**5.339** The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also

allocated to the space research (passive) and Earth exploration-satellite (passive) services on a secondary basis.

* 1. **A** (SUP - WRC-07)

\* Pursuant to Resolution 99 (Rev. Dubai, 2018) of the Plenipotentiary Conference and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

* 1. All emissions are prohibited in the following bands: 1 400-1 427 MHz,

2 690-2 700 MHz, except those provided for by No. 5.422,

10.68-10.7 GHz, except those provided for by No. 5.483, 15.35-15.4 GHz, except those provided for by No. 5.511, 23.6-24 GHz,

31.3-31.5 GHz,

31.5-31.8 GHz, in Region 2,

48.94-49.04 GHz, from airborne stations 50.2-50.4 GHz2,

52.6-54.25 GHz,

86-92 GHz,

100-102 GHz,

109.5-111.8 GHz,

114.25-116 GHz,

148.5-151.5 GHz,

164-167 GHz,

182-185 GHz,

190-191.8 GHz,

200-209 GHz,

226-231.5 GHz,

250-252 GHz. (WRC-03)

* 1. In the bands 1 400-1 727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

**5.341A** In Region 1, the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)**\*. This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. **9.21** with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. **5.342**. (WRC-15)

**5.341B** In Region 2, the frequency band 1 427-1 518 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)\***. This identification does not preclude the use of this frequency band by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)

* 1. **C** The frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations in Region 3 wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)\***. The use of these frequency bands by the above administrations for the implementation of IMT in the frequency bands 1 429-1 452 MHz and 1 492-1 518 MHz is subject to agreement obtained under No. **9.21** from countries using stations of the aeronautical mobile service. This identification does not

2 **5.340.1** The allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands. (WRC-97)

* *Note by the Secretariat:* This Resolution was revised by WRC-19.

preclude the use of these frequency bands by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-15)

* 1. *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Uzbekistan, Kyrgyzstan and Ukraine, the frequency band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis, exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the frequency band 1 452-1 492 MHz is subject to agreement between the administrations concerned. (WRC-15)
	2. In Region 2, the use of the band 1 435-1 535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
	3. *Alternative allocation:* in the United States, the band 1 452-1 525 MHz is allocated to the fixed and mobile services on a primary basis (see also No. 5.343).
	4. Use of the frequency band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**. (WRC-19)
	5. In Algeria, Angola, Saudi Arabia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Kenya, Kuwait, Lesotho, Lebanon, Liberia, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Palestine\*\*, Qatar, Dem. Rep. of the Congo, Rwanda, Senegal, Seychelles, Somalia, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Tunisia, Zambia, and Zimbabwe, the frequency band 1 452-1 492 MHz is identified for use by administrations listed above wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-23)**. This identification does not preclude the use of this frequency band by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained under No. **9.21** with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. **5.342**. See also Resolution **761 (Rev.WRC-19)**. (WRC-23)
	6. **A** The frequency band 1 452-1 492 MHz is identified for use by administrations in Region 3 wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-19)** and Resolution **761 (Rev.WRC-19)**. The use of this frequency band by the above administrations for the implementation of IMT is subject to agreement obtained under No. **9.21** from countries using stations of the aeronautical mobile service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-19)
	7. (SUP - WRC-07)
	8. **A**\* (SUP - WRC-07)
	9. The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No. **5.43A** does not apply. (WRC-03)

**5.348A** In the band 1 518-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. 9.11A for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be –150 dB(W/m2) in any 4 kHz band for all angles of arrival, instead of those given in Table 5-2 of Appendix **5**. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from stations in the mobile service in the territory of Japan. No. **5.43A** does not apply. (WRC-03)

\*\* The use by Palestine of the allocation to the mobile service in the frequency band 1 452-1 492 MHz identified for IMT is noted, pursuant to Resolution 99 (Rev. Dubai, 2018) and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

* *Note by the Secretariat:* This provision has been modified by WRC-07, and subsequently renumbered No. **5.208B**

in order to preserve the sequential order.

**5.348B** In the band 1 518-1 525 MHz, stations in the mobile-satellite service shall not claim protection from aeronautical mobile telemetry stations in the mobile service in the territory of the United States (see Nos. **5.343** and **5.344**) and in the countries listed in No. **5.342**. No. **5.43A** does not apply. (WRC-03)

* 1. **C** (SUP - WRC-07)
	2. *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Cameroon, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Israel, , Kuwait, Lebanon, North Macedonia, Morocco, Qatar, Syrian Arab Republic, Kyrgyzstan, Turkmenistan and Yemen, the allocation of the frequency band 1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-23)
	3. *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis. (WRC-19)

**5.351** The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz shall

not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

**5.351A** For the use of the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5­

1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by

the mobile-satellite service, see Resolutions **212 (Rev.WRC-23)** and **225 (Rev.WRC-23)**. (WRC-23)

**5.352** (SUP - WRC-97)

* 1. **A** In the frequency band 1 525-1 530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Morocco, Mauritania, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Viet Nam and Yemen notified prior to 1 April 1998. (WRC-19)
	2. (SUP - WRC-97)
	3. **A** In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (WRC-23)**\* shall apply.) (WRC-23)
	4. The use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite services is subject to coordination under No. 9.11A.
	5. *Additional allocation:* in Bahrain, Bangladesh, Congo (Rep. of the), Djibouti, Egypt, Eritrea, Iraq, Israel, Kuwait, Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Chad, Togo and Yemen, the bands 1 540­ 1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis. (WRC-12)
	6. The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article 31).
	7. Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.
* *Note by the Secretariat:* This Resolution was revised by WRC-15 and WRC-19.
	1. **A** In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article **44**. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44** shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44**. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (Rev.WRC-23)** shall apply.) (WRC-23)
	2. (SUP - WRC-97)
	3. *Additional allocation:* in Germany, Saudi Arabia, Armenia, Azerbaijan, Belarus, Cameroon, the Russian Federation, Georgia, Guinea, Guinea-Bissau, Jordan, Kazakhstan, Kuwait, Lithuania, Mauritania, Uganda, Uzbekistan, Pakistan, Poland, the Syrian Arab Republic, Kyrgyzstan, the Dem. People’s Rep. of Korea, Romania, Tajikistan, Tunisia and Turkmenistan , the frequency bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in these frequency bands. (WRC-23)

**5.360 to 5.362** (SUP - WRC-97)

**5.362A** In the United States, in the bands 1 555-1 559 MHz and 1 656.5-1 660.5 MHz, the aeronautical mobile- satellite (R) service shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44. Account shall be taken of the priority of safety-related communications in the other mobile-satellite

|  |  |
| --- | --- |
| services. | (WRC-97) |
| **5.362B** | (SUP - WRC-15) |
| **5.362C** | (SUP - WRC-15) |
| **5.363** | (SUP - WRC-07) |
| **5.364** | The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the |

radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. 9.11A. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of 15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. 5.366 (to which No. 4.10 applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed –3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 5.366 and stations in the fixed service operating in accordance with the provisions of No. 5.359. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. 5.366.

* 1. The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. 9.11A.
	2. The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. 9.21.
	3. *Additional allocation*: The frequency band 1 610-1 626.5 MHz is also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. 9.21. (WRC-12)
	4. The provisions of No. **4.10** do not apply with respect to the radiodetermination-satellite and mobile- satellite services in the frequency band 1 610-1 626.5 MHz. However, No. **4.10** applies in the frequency band 1 610­ 1 626.5 MHz with respect to the aeronautical radionavigation-satellite service when operating in accordance with No. **5.366**, the aeronautical mobile-satellite (R) service when operating in accordance with No. **5.367**, and in the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves* 5 of Resolution **365 (WRC-23)**) and 1 621.35-1 626.5 MHz with respect to the maritime mobile-satellite service when used for the global maritime distress and safety system (GMDSS). In applying the procedure of Section II of Article **9**, the provisions of No. **4.10** do not apply for the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves* 5 of Resolution **365 (WRC-23)**) and 2 483.59-2 499.91 MHz (space-to-Earth) for the maritime mobile-satellite service when used for the GMDSS with satellite networks or systems for which complete coordination information has been received by the Radiocommunication Bureau before 20 November 2023. Resolution 365 (WRC-23) applies. (WRC-23)
	5. *Different category of service:* in Angola, Australia, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Lebanon, Liberia, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, the Dem. Rep. of the Congo, Sudan, South Sudan, Togo and Zambia, the allocation of the band 1 610-1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21** from countries not listed in this provision. (WRC-12)
	6. *Different category of service:* in Venezuela, the allocation to the radiodetermination-satellite service in the band 1 610-1 626.5 MHz (Earth-to-space) is on a secondary basis.
	7. *Additional allocation:* in Region 1, the band 1 610-1 626.5 MHz (Earth-to-space) is also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. 9.21. (WRC-12)
	8. Harmful interference shall not be caused to stations of the radio astronomy service using the frequency band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. 29.13 applies). The equivalent power flux-density (epfd) produced in the frequency band 1 610.6-1 613.8 MHz by all space stations of a non-geostationary-satellite system in the mobile-satellite service (space-to-Earth) operating in frequency band 1 613.8-1 626.5 MHz shall be in compliance with the protection criteria provided in Recommendations ITU-R RA.769-2 and ITU-R RA.1513-2, using the methodology given in Recommendation ITU-R M.1583-1, and the radio astronomy antenna pattern described in Recommendation ITU-R RA.1631-0. (WRC-19)

**5.372A** The maritime mobile-satellite service in the frequency bands 1 614.4225-1 618.725 MHz or 1 616.3-1 620.38 MHz (Earth-to-space) (see *resolves* 5 of Resolution **365 (WRC-23)**) and 2 483.59-2 499.91 MHz (space-to-Earth) when they are used for the global maritime distress and safety system (GMDSS) is limited to the geostationary-satellite networks identified in Resolution **365 (WRC-23)** and their associated earth stations located within a service area from 75°E to 135°E longitude and from 10°N to 55°N latitude. Resolution **365 (WRC-23)** applies. (WRC-23)

* 1. Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose additional constraints on earth stations operating in the maritime mobile-satellite service or maritime earth stations of the radiodetermination-satellite service operating in accordance with the Radio Regulations in the frequency band 1 610-1 621.35 MHz or on earth stations operating in the maritime mobile-satellite service operating in accordance with the Radio Regulations in the frequency band 1 626.5-1 660.5 MHz, unless otherwise agreed between the notifying administrations. (WRC-19)
	2. **A** Maritime mobile earth stations receiving in the frequency band 1 621.35-1 626.5 MHz shall not impose constraints on the assignments of earth stations of the mobile-satellite service (Earth-to-space) and the radiodetermination-satellite service (Earth-to-space) in the frequency band 1 621.35-1 626.5 MHz in networks for which complete coordination information has been received by the Radiocommunication Bureau before 28 October 2019. (WRC-19)
	3. Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. 5.359. (WRC-97)
	4. The use of the frequency band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter- satellite links is limited to distress, urgency and safety communications (see Article **31**). (WRC-23)
	5. Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

**5.376A** Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)

|  |  |
| --- | --- |
| **5.377** | (SUP - WRC-03) |
| **5.378** | Not used. |
| **5.379** | *Additional* | *allocation:* in | Bangladesh, | India, | Indonesia, | Nigeria | and | Pakistan, | the | band |

1 660.5-1 668.4 MHz is also allocated to the meteorological aids service on a secondary basis.

**5.379A** Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.

**5.379B** The use of the frequency band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-23)

**5.379C** In order to protect the radio astronomy service in the band 1 668-1 670 MHz, the aggregate power flux- density values produced by mobile earth stations in a network of the mobile-satellite service operating in this band shall not exceed –181 dB(W/m2) in 10 MHz and 194 dB(W/m2) in any 20 kHz at any radio astronomy station recorded in the Master International Frequency Register, for more than 2% of integration periods of 2 000 s. (WRC-03)

**5.379D** For sharing of the frequency band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution **744 (Rev.WRC-23)** shall apply. (WRC-23)

**5.379E** In the band 1 668.4-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to stations in the meteorological aids service in China, Iran (Islamic Republic of), Japan and Uzbekistan. In the band 1 668.4-1 675 MHz, administrations are urged not to implement new systems in the meteorological aids service and are encouraged to migrate existing meteorological aids service operations to other bands as soon as

|  |  |
| --- | --- |
| practicable. | (WRC-03) |
| **5.380** | (SUP - WRC-07) |
| **5.380A** | In | the | band | 1 670-1 675 | MHz, | stations | in | the | mobile-satellite | service | shall | not | cause | harmful |

interference to, nor constrain the development of, existing earth stations in the meteorological-satellite service notified before 1 January 2004. Any new assignment to these earth stations in this band shall also be protected from harmful interference from stations in the mobile-satellite service. (WRC-07)

* 1. *Additional allocation:* in Afghanistan, Cuba, India, Iran (Islamic Republic of) and Pakistan, the band 1 690-1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)
	2. *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Congo (Rep. of the), Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Russian Federation, Guinea, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, North Macedonia, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, the Syrian Arab Republic, Kyrgyzstan, Somalia, Tajikistan, Turkmenistan, Ukraine and Yemen, the allocation of the frequency band 1 690-1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**), and in the Dem. People’s Rep. of Korea, the allocation of the frequency band 1 690-1 700 MHz to the fixed service is on a primary basis (see No. **5.33**) and to the mobile, except aeronautical mobile, service on a secondary basis. (WRC-19)
	3. Not used.
	4. *Additional allocation:* in India, Indonesia and Japan, the band 1 700-1 710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis. (WRC-97)
	5. **A** The frequency bands 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, or portions thereof, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)**\*. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)
	6. *Additional allocation:* the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)
	7. *Additional allocation:* the frequency band 1 750-1 850 MHz is also allocated to the space operation (Earth-to-space) and space research (Earth-to-space) services in Region 2 (except in Mexico), in Australia, Guam, India, Indonesia and Japan on a primary basis, subject to agreement obtained under No. 9.21, having particular regard to troposcatter systems. (WRC-15)
	8. *Additional allocation:* in Belarus, Georgia, , Kyrgyzstan, Romania, Tajikistan and Turkmenistan, the frequency band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-23)
	9. The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications (IMT). Such use does not preclude the use of these frequency bands by other services to which they are allocated. The frequency bands should be made available for IMT in accordance with Resolution **212 (Rev.WRC-23)** (see also Resolution **223 (Rev.WRC-23)**\*). (WRC-23)

**5.388A** The frequency bands 1 710-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and the frequency bands 1 710-1 980 MHz and 2 110-2 160 MHz in Region 2 are identified for the use by high altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **221 (Rev.WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply. Such use of HIBS in the frequency bands 1 710-1 785 MHz in Regions 1 and 2, and 1 710-1 815 MHz in Region 3 is limited to reception by HIBS, and in the frequency band 2 110-

2 170 MHz is limited to transmission from HIBS. (WRC-23)

\* *Note by the Secretariat:* This Resolution was revised by WRC-19.

* 1. **B (SUP - WRC-23)**
	2. Not used.

**5.389A** The use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (Rev.WRC-23)**. (WRC-23)

**5.389B** The use of the frequency band 1 980-1 990 MHz by the mobile-satellite service shall not cause harmful interference to or constrain the development of the fixed and mobile services in Argentina, Brazil, Canada, Chile, Ecuador, the United States, Honduras, Jamaica, Mexico, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. (WRC-19)

**5.389C** The use of the frequency bands 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the mobile-satellite service is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (Rev.WRC-23)**. (WRC-23)

**5.389D** (SUP - WRC-03)

**5.389E** The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.

* 1. **F** In Algeria, Cape Verde, Egypt, Iran (Islamic Republic of), Mali, Syrian Arab Republic and Tunisia, the use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services, nor hamper the development of those services prior to 1 January 2005, nor shall the former service request protection from the latter services. (WRC-19)
	2. (SUP - WRC-07)
	3. In making assignments to the mobile service in the frequency bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154-0, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-15)
	4. Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration- satellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to­ space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.
	5. **A** (SUP - WRC-07)
	6. *Additional allocation:* in Canada, the United States and India, the frequency band 2 310-2 360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**, with the exception of *resolves* 3 in regard to the limitation on broadcasting-satellite systems in the upper 25 MHz. Complementary terrestrial sound broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use. (WRC-19)

\*\* *Note by the Secretariat:* This Resolution was revised by WRC-12.

* 1. In the United States, the use of the frequency band 2 360-2 395 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the frequency band 2 360-2 400 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. (WRC-23)
	2. In France and Turkey, the use of the band 2 310-2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service. (WRC-03)
	3. (SUP - WRC-19)
	4. (SUP - WRC-12)
	5. In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. 4.10 do not apply.
	6. **A** *Different category of service:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, the band 2 483.5-2 500 MHz is allocated on a primary basis to the radiolocation service. The radiolocation stations in these countries shall not cause harmful interference to, or claim protection from, stations of the fixed, mobile and mobile-satellite services operating in accordance with the Radio Regulations in the frequency band 2 483.5-2 500 MHz. (WRC-12)
	7. Except for cases referred to in No. **5.401**, stations of the radiodetermination-satellite service operating in the frequency band 2 483.5-2 500 MHz for which notification information is received by the Bureau after 17 February 2012, and the service area of which includes Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Ukraine, shall not cause harmful interference to, and shall not claim protection from stations of the radiolocation service operating in these countries in accordance with No. **5.398A**. (WRC-12)
	8. (SUP - WRC-12)
	9. In Angola, Australia, Bangladesh, China, Eritrea, Eswatini, Ethiopia, India, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Togo and Zambia, the frequency band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination­ satellite service before WRC-12, subject to agreement obtained under No. **9.21** from countries not listed in this provision. Systems in the radiodetermination-satellite service for which complete coordination information has been received by the Radiocommunication Bureau before 18 February 2012 will retain their regulatory status, as of the date of receipt of the coordination request information. (WRC-19)
	10. The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. 9.11A. Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide.
	11. Subject to agreement obtained under No. 9.21, the band 2 520-2 535 MHz may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. 9.11A apply. (WRC-07)
	12. *Additional allocation:* in India and Iran (Islamic Republic of), the band 2 500-2 516.5 MHz may also be used for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries, subject to agreement obtained under No. 9.21.
	13. (SUP - WRC-12)
	14. Not used.
	15. In the band 2 500-2 520 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed –152 dB(W/(m2  4 kHz)) in Argentina, unless otherwise agreed by the administrations concerned.

**5.408** (SUP - WRC-2000)

1. **5.409** (SUP - WRC-07)

**5.409A** The frequency band 2 500-2 690 MHz in Regions 1 and 2, and the frequency band 2 500-2 655 MHz in Region 3 are identified for use by high-altitude platform stations as International Mobile Telecommunications (IMT) base stations (HIBS). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **218 (WRC-23)** shall apply. HIBS shall not claim protection from existing primary services. No. **5.43A** does not apply. Such use of HIBS in the frequency bands 2 500-2 510 MHz in Regions 1 and 2, and 2 500-2 535 MHz in Region 3 is limited to reception by HIBS. (WRC-23)

1. **5.410** The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. **9.21**. No. **9.21** does not apply to tropospheric scatter links situated entirely outside Region 1. Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in

this band. When planning new tropospheric scatter radio-relay links in this band, all possible measures shall be taken to avoid directing the antennas of these links towards the geostationary-satellite orbit. (WRC-12)

1. **5.411** (SUP - WRC-07)
2. **5.412** *Alternative allocation:* in Kyrgyzstan and Turkmenistan, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)
3. **5.413** In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.
4. **5.414** The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) is subject to coordination under No. 9.11A. (WRC-07)

**5.414A** In Japan and India, the use of the bands 2 500-2 520 MHz and 2 520-2 535 MHz, under No. **5.403**, by a satellite network in the mobile-satellite service (space-to-Earth) is limited to operation within national boundaries and subject to the application of No. **9.11A**. The following pfd values shall be used as a threshold for coordination under No. **9.11A**, for all conditions and for all methods of modulation, in an area of 1 000 km around the territory of the administration notifying the mobile-satellite service network:

,136 dB(W/(m2 · MHz)) for 0°    5°

,136 + 0.55 (  5) dB(W/(m2 · MHz))

for 5° <   25°

,125 dB(W/(m2 · MHz)) for 25°

<   90°

where  is the angle of arrival of the incident wave above the horizontal plane, in degrees. Outside this area Table **21-4** of Article **21** shall apply. Furthermore, the coordination thresholds in Table 5-2 of Annex 1 to Appendix **5** of the Radio Regulations (Edition of 2004), in conjunction with the applicable provisions of Articles **9** and **11** associated with No. **9.11A**, shall apply to systems for which complete notification information has been received by the Radicommunication Bureau by 14 November 2007 and that have been brought into use by that date. (WRC-07)

**5.415** The use of the bands 2 500-2 690 MHz in Region 2 and 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. 9.21, giving particular attention to the broadcasting-satellite service in Region 1. (WRC-07)

**5.415A** *Additional allocation*: in India and Japan, subject to agreement obtained under No. **9.21**, the band 2 515-2 535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within their national boundaries. (WRC-2000)

**5.416** The use of the band 2 520-2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. 9.21. The provisions of No. **9.19** shall be applied by administrations in this band in their bilateral and multilateral negotiations. (WRC-07)

**5.417** (SUP - WRC-2000)

**5.417A** (SUP - WRC-15)

**5.417B** (SUP - WRC-15)

**5.417C** (SUP - WRC-15)

**5.417D** (SUP - WRC-15)

**5.418** *Additional allocation:* in India, the frequency band 2 535-2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (Rev.WRC-19)**. The provisions of No. **5.416** and Table **21-4** of Article **21** do not apply to this additional allocation. Use of non­ geostationary-satellite systems in the broadcasting-satellite service (sound) is subject to Resolution **539 (Rev.WRC-19)**. Geostationary broadcasting-satellite service (sound) systems for which complete Appendix **4** coordination information has been received after 1 June 2005 are limited to systems intended for national coverage. The power flux-density at the Earth’s surface produced by emissions from a geostationary broadcasting-satellite service (sound) space station operating in the frequency band 2 630-2 655 MHz, and for which complete Appendix **4** coordination information has been received after 1 June 2005, shall not exceed the following limits, for all conditions and for all methods of modulation:

for 5 <   25

130 dB(W/(m2 · MHz)) for 0    5

130  0.4 (  5) dB(W/(m2 · MHz))

–122 dB(W/(m2 · MHz)) for 25 <   90

where  is the angle of arrival of the incident wave above the horizontal plane, in degrees. These limits may be exceeded on the territory of any country whose administration has so agreed. As an exception to the limits above, the pfd value of −122 dB(W/(m2 · MHz)) shall be used as a threshold for coordination under No. **9.11** in an area of 1 500 km around the territory of the administration notifying the broadcasting-satellite service (sound) system.

In addition, an administration listed in this provision shall not have simultaneously two overlapping frequency assignments, one under this provision and the other under No. **5.416** for systems for which complete Appendix **4** coordination information has been received after 1 June 2005. (WRC-19)

**5.418A** In certain Region 3 countries listed in No. **5.418**, use of the band 2 630-2 655 MHz by non­ geostationary-satellite systems in the broadcasting-satellite service (sound) for which complete Appendix **4** coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **9.12A**, in respect of geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received after 2 June 2000, and No. **22.2** does not apply. No. **22.2** shall continue to apply with respect to geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, is considered to have been received before 3 June 2000. (WRC-03)

**5.418B** Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.418**, for which complete Appendix **4** coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **9.12**. (WRC-03)

**5.418C** Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix **4** coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. **9.13** with respect to non-geostationary-satellite systems in the broadcasting-satellite service (sound), pursuant to No. **5.418** and No. **22.2** does not apply. (WRC-03)

**5.419** When introducing systems of the mobile-satellite service in the band 2 670-2 690 MHz, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. 9.11A. (WRC-07)

**5.420** The band 2 655-2 670 MHz may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. 9.21. The coordination under No. 9.11A applies. (WRC-07)

1. **5.420A** (SUP - WRC-07)
2. **5.421** (SUP - WRC-03)
3. **5.422** *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Brunei Darussalam, Congo (Rep. of the), Côte d'Ivoire, Cuba, Djibouti, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Mauritania, Mongolia, Montenegro, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, the Dem.

Rep. of the Congo, Romania, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine and Yemen, the band 2 690­ 2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985. (WRC-12)

1. **5.423** In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.
2. **5.424** *Additional allocation:* in Canada, the band 2 850-2 900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.
3. **5.424A** In the band 2 900-3 100 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the radionavigation service. (WRC-03)
4. **5.425** In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder (SIT) system shall be confined to the sub-band 2 930 -2 950 MHz.
5. **5.426** The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground- based radars.
6. **5.427** In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. 4.9.
7. **5.428** *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)
8. **5.429** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Benin, Brunei Darussalam, Cambodia, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Egypt, the United Arab Emirates, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Malaysia, New Zealand, Oman, Uganda, Pakistan, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, the Dem. People’s Rep. of Korea, Sudan and Yemen, the frequency band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. New Zealand and the countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service. (WRC-19)

**5.429A** *Additional allocation*: in Angola, , Botswana, Burkina Faso, Burundi, Cabo Verde, Central African Republic, Comoros, Djibouti, Eritrea, Eswatini, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Palestine\*, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, , South Sudan, South Africa, Tanzania, Chad, Togo, Zambia and Zimbabwe, the frequency band 3 300-3 400 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. Stations in the mobile service operating in the frequency band 3 300-3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-23)

**5.429B** In the following countries of Region 1: Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Comoros, Congo (Rep. of the), Côte d’Ivoire, Djibouti, Egypt, Eritrea, Eswatini, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mauritania, Mongolia, Mozambique, Namibia, Niger, Nigeria, Uganda, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, South Sudan, South Africa, Tanzania, Chad, Togo, Zambia and Zimbabwe, the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). The use of this frequency band shall be in accordance with Resolution **223 (Rev.WRC-23)**. The use of the frequency band 3 300-3 400 MHz by IMT stations in the mobile service shall not cause harmful interference to, or claim protection from, systems in the radiolocation service, and administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to protect operations within the radiolocation service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-23)

**5.429C** *Different category of service*: In Argentina, Brazil, Cuba, the Dominican Republic, Guatemala, Mexico, Paraguay and Uruguay, the frequency band 3 300-3 400 MHz is allocated to the fixed service on a primary basis. Stations in the fixed services operating in the frequency band 3 300­ 3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-23)

\* Pursuant to Resolution 99 (Rev. Dubai, 2018) of the Plenipotentiary Conference, and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

**5.429D** In Region 2, the use of the mobile, except aeronautical mobile, service in the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). Such use shall be in accordance with Resolution **223 (Rev.WRC-23)**. The use of the frequency band 3 300-3 400 MHz by IMT stations in the mobile service shall not cause harmful interference to, or claim protection from, systems in the radiolocation service, and administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to protect operations within the radiolocation service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-23)

**5.429E** *Additional allocation*: in Papua New Guinea, the frequency band 3 300-3 400 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. Stations in the mobile service operating in the frequency band 3 300-3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-15)

**5.429F** In the following countries in Region 3: Cambodia, India, Indonesia, Lao P.D.R., Pakistan, the Philippines, Singapore and Viet Nam, the use of the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). Such use shall be in accordance with Resolution **223 (Rev.WRC-23)**. The use of the frequency band 3 300-3 400 MHz by IMT stations in the mobile service shall not cause harmful interference to, or claim protection from, systems in the radiolocation service. Before an administration brings into use a base or mobile station of an IMT system in this frequency band, it shall seek agreement under No. **9.21** with neighbouring countries to protect the radiolocation service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-23)

**5.429G** Stations in the mobile, except aeronautical mobile, service operating in the frequency band 3 300-3 400 MHz in Region 2 shall not cause harmful interference to, or claim protection from, systems operating in the radiolocation service. (WRC-23)

**5.430** *Additional allocation:* in Kyrgyzstan and Turkmenistan, the frequency band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

**5.430A** The allocation of the frequency band 3 400-3 600 MHz to the mobile, except aeronautical mobile, service is subject to agreement obtained under No. **9.21**. This frequency band is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The provisions of Nos. **9.17** and **9.18** shall also apply in the coordination phase. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band, it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m2  4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station) and with the assistance of the Bureau if so requested. In case of disagreement, calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-15)

**5.431** *Additional allocation:* in Germany, the frequency band 3 400-3 475 MHz is also allocated to the amateur service on a secondary basis. (WRC-19)

**5.431A** In Region 2, the allocation of the frequency band 3 400-3 500 MHz to the mobile, except aeronautical mobile, service on a primary basis is subject to agreement obtained under No. **9.21**. (WRC-15)

**5.431B** In Region 2, the frequency band 3 400-3 600 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a base or mobile station of an IMT system, it shall seek agreement under No. **9.21** with other administrations and ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed

−154.5 dB(W/(m2  4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service, including IMT systems, in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-15)

**5.432** *Different category of service:* in Korea (Rep. of), Japan, Pakistan and the Dem. People’s Rep. of Korea, the allocation of the frequency band 3 400-3 500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **5.33**). (WRC-19)

**5.432A** In Korea (Rep. of), Japan, Pakistan and the Dem. People’s Rep. of Korea, the frequency band 3 400­ 3 500 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m2  4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 500 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-19)

**5.432B** *Different category of service:* in Australia, Bangladesh, Brunei Darussalam, China, French overseas communities of Region 3, India, Indonesia, Iran (Islamic Republic of), Malaysia, New Zealand, the Philippines, Singapore and Thailand, the frequency band 3 400-3 500 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis, subject to agreement obtained under No. **9.21** with other administrations and is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m2  4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 500 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-19)

**5.433** In Regions 2 and 3, in the band 3 400-3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985.

Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

1. **5.433A** In Australia, Bangladesh, Brunei Darussalam, China, French overseas communities of Region 3, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, New Zealand, Pakistan, the Philippines, the Dem. People’s Rep. of Korea and Singpore, the frequency band 3 500-3 600 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m2  4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so requested. In case of disagreement, the calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 500-3 600 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations (Edition of 2004). (WRC-23)
2. **5.433B** In Angola, Botswana, Guinea, Lesotho, Malawi and South Sudan, the frequency band 3 600-3 700 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of the frequency band by any application of the services to which it is allocated and does not establish priority in the Radio
3. Regulations. The conditions of No. **5.434A** shall apply. (WRC-23)
4. **5.434** In Region 2, the frequency band 3 600-3 700 MHz is identified for use by these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-to-Earth). (WRC-23)
5. **5.434A** The use of the frequency band 3 600-3 800 MHz by the mobile, except aeronautical mobile, service on a primary basis in Region 1 is subject to agreement obtained under No. **9.21** if the power flux-density (pfd) limit below is exceeded. The provisions of Nos. **9.17** and **9.18** shall also apply in the coordination phase. Before an administration in Region 1 brings into use a station in the mobile service in the frequency band 3 600-3 800 MHz, for the protection of stations in the fixed and fixed-satellite services, it shall ensure that the pfd produced at 3 m above ground does not exceed −154.5 dB(W/(m2·4 kHz)) for more than 20% of the time at the border of the territory of any other administration. Stations in the mobile service operating in the frequency band 3 600-3 800 MHz shall not claim more protection from space stations than that provided in Table **21-4** of the Radio Regulations. (WRC-23)
6. **5.434B** In Algeria, Saudi Arabia, Azerbaijan, Bahrain, Belarus, Benin, Burkina Faso, Burundi, Cameroon, Central African Rep., Comoros, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Eswatini, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Kazakhstan, Kenya, Kuwait, Lebanon, Liberia, Libya, Madagascar, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Uzbekistan, Palestine\*, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, South Africa, Tanzania, Chad, Togo, Tunisia, Yemen, Zambia and Zimbabwe, the frequency band 3 600-3 800 MHz is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of the frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The conditions of No. **5.434A** shall apply. (WRC-23)
7. **5.435** In Japan, in the band 3 620-3 700 MHz, the radiolocation service is excluded.
8. **5.435A** *Different category of service*: In Angola, Botswana, Guinea, Lesotho, Malawi and South Sudan, the frequency band 3 700-3 800 MHz is allocated to the mobile service on a secondary basis. (WRC-23)
9. **5.435B** In the Bahamas, Belize, Brazil, Canada, Colombia, Costa Rica, United States, Guatemala, the French overseas departments and communities in Region 2, Greenland, the overseas countries and territories within the Kingdom of the Netherlands in Region 2, Paraguay, Peru, Trinidad and Tobago and Uruguay, the frequency band 3 700-3 800 MHz is identified for use by any of these administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to ensure the protection of the fixed-satellite service (space-toEarth). (WRC-23)
10. **5.436** Use of the frequency band 4 200-4 400 MHz by stations in the aeronautical mobile (R) service is reserved exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **424 (WRC-23)**. (WRC-23)
11. **5.437** Passive sensing in the Earth exploration-satellite and space research services may be authorized in the frequency band 4 200-4 400 MHz on a secondary basis. (WRC-15)
12. **5.438** Use of the frequency band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. (WRC­ 15)
13. **5.439** *Additional allocation:* in Iran (Islamic Republic of), the band 4 200-4 400 MHz is also allocated to the fixed service on a secondary basis. (WRC-12)
14. **5.440** The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of  2 MHz of these frequencies, subject to agreement obtained under No. 9.21.

\* Pursuant to Resolution 99 (Rev. Dubai, 2018) of the Plenipotentiary Conference, and taking into account the Israeli-Palestinian Interim Agreement of 28 September 1995.

**5.440A** In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 400-4 940 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. **1.83**). Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to, nor claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this band by other mobile service applications or by other services to which this band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-07)

**5.441** The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7­

10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75­

13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed- satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

**5.441A** In Brazil, Paraguay and Uruguay, the frequency band 4 800-4 900 MHz, or portions thereof, is identified for the implementation of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained with neighbouring countries, and IMT stations shall not claim protection from stations of other applications of the mobile service. Such use shall be in accordance with Resolution **223 (Rev.WRC-19)**. (WRC-19)

**5.441B** In Angola, Argentina, Armenia, Azerbaijan, Benin, Botswana, Brazil, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Chile, China, Colombia, Congo (Rep. of the), Côte d’Ivoire, Djibouti, Eswatini, Russian Federation, Gabon, Ghana, Guinea, Iran (Islamic Republic of), Kazakhstan, Lao P.D.R., Lesotho, Liberia, Madagascar, Malawi, Mali, , Mongolia, ,Namibia, Niger, , Uganda, Uzbekistan, the Dem. Rep. of the Congo, Kyrgyzstan, the Dem. People's Rep. of Korea, South Sudan, South Africa, Chad, , Togo, Viet Nam, Zambia and Zimbabwe, the frequency band 4 800-4 990 MHz, or portions thereof, is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. **9.21** with concerned administrations, and IMT stations shall not claim protection from stations of other applications of the mobile service. In addition, before an administration brings into use an IMT station in the mobile service, it shall ensure that the power flux-density (pfd) produced by this station does not exceed −155 dB(W/(m2 · 1 MHz)) produced up to 19 km above sea level at 20 km from the coast, defined as the low-water mark, as officially recognized by the coastal State. Resolution **223 (Rev.WRC-23)** applies. (WRC-23)

**5.442** In the frequency bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), and in Australia, the frequency band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to the fixed service. (WRC-15)

**5.443** *Different category of service:* in Argentina, Australia and Canada, the allocation of the bands 4 825-4 835 MHz and 4 950-4 990 MHz to the radio astronomy service is on a primary basis (see No. 5.33).

**5.443A** (SUP - WRC-03)

**5.443AA** In the frequency bands 5 000-5 030 MHz and 5 091-5 150 MHz, the aeronautical mobile-satellite (R) service is subject to agreement obtained under No. **9.21**. The use of these bands by the aeronautical mobile-satellite

(R) service is limited to internationally standardized aeronautical systems. (WRC-12)

**5.443B** In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth’s surface in the frequency band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the frequency band 5 010-5 030 MHz shall not exceed −124.5 dB(W/m2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the frequency band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the frequency band 5 010-5 030 MHz shall comply with the limits in the frequency band 4 990­ 5 000 MHz defined in Resolution **741 (Rev.WRC-15)**. (WRC-15)

**5.443C** The use of the frequency band 5 030-5 091 MHz by the aeronautical mobile (R) service is limited to internationally standardized aeronautical systems. Unwanted emissions from the aeronautical mobile (R) service in the frequency band 5 030-5 091 MHz shall be limited to protect RNSS system downlinks in the adjacent 5 010­ 5 030 MHz band. Until such time that an appropriate value is established in a relevant ITU-R Recommendation, the

e.i.r.p. density limit of −75 dBW/MHz in the frequency band 5 010-5 030 MHz for any AM(R)S station unwanted emission should be used. (WRC-12)

**5.443D** In the frequency band 5 030-5 091 MHz, the aeronautical mobile-satellite (R) service is subject to coordination under No. **9.11A**. The use of this frequency band by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

**5.444** The frequency band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the frequency band 5 030-5 091 MHz, the requirements of this system shall have priority over other uses of this frequency band. For the use of the frequency band 5 091-5 150 MHz, No. **5.444A** and Resolution **114 (Rev.WRC-15)** apply. (WRC-15)

**5.444A** The use of the allocation to the fixed-satellite service (Earth-to-space) in the frequency band 5 091-5 150 MHz is limited to feeder links of non-geostationary satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the frequency band 5 091-5 150 MHz by feeder links of non-geostationary satellite systems in the mobile-satellite service shall be subject to application of Resolution **114 (Rev.WRC-15)**. Moreover, to ensure that the aeronautical radionavigation service is protected from harmful interference, coordination is required for feeder-link earth stations of the non-geostationary satellite systems in the mobile-satellite service which are separated by less than 450 km from the territory of an administration operating ground stations in the aeronautical radionavigation service. (WRC-15)

**5.444B** The use of the frequency band 5 091-5 150 MHz by the aeronautical mobile service is limited to:

* systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards, limited to surface applications at airports. Such use shall be in accordance with Resolution **748 (Rev.WRC-19)**;
* aeronautical telemetry transmissions from aircraft stations (see No. **1.83**) in accordance with Resolution **418 (Rev.WRC-19)**. (WRC-19)

**5.445** Not used.

**5.446** *Additional allocation:* in the countries listed in No. 5.369, the frequency band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. 9.21. In Region 2 (except in Mexico), the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in No. 5.369 and Bangladesh, the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodetermination-satellite service operating in the frequency bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power flux-density at the Earth’s surface shall in no case exceed −159 dB(W/m2) in any 4 kHz band for all angles of arrival. (WRC-15)

**5.446A** The use of the frequency bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution **229 (Rev.WRC-23)**. (WRC-23)

**5.446B** In the band 5 150-5 250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. **5.43A** does not apply to the mobile service with respect to fixed-satellite service earth stations. (WRC-03)

**5.446C** *Additional allocation:* in Region 1 (except in Algeria, Saudi Arabia, Bahrain, Egypt, United Arab Emirates, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Syrian Arab Republic, Sudan, South Sudan and Tunisia), the frequency band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis,

limited to aeronautical telemetry transmissions from aircraft stations (see No. **1.83**), in accordance with Resolution **418 (Rev.WRC-19)**. These stations shall not claim protection from other stations operating in accordance with Article **5**. No. **5.43A** does not apply. (WRC-19)

**5.446D** *Additional allocation:* in Brazil, the band 5 150-5 250 MHz is also allocated to the aeronautical mobile service on a primary basis, limited to aeronautical telemetry transmissions from aircraft stations (see No. **1.83**), in accordance with Resolution **418 (Rev.WRC-19**). (WRC-19)

**5.447** *Additional allocation:* in Côte d'Ivoire, Egypt, Lebanon, the Syrian Arab Republic and Tunisia, the frequency band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. **9.21**. In this case, the provisions of Resolution **229 (Rev.WRC-23)** do not apply. (WRC-23)

**5.447A** The allocation to the fixed-satellite service (Earth-to-space) in the band 5 150-5 250 MHz is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A.

**5.447B** *Additional allocation*: the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space­ to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. 9.11A. The power flux-density at the Earth’s surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150­ 5 216 MHz shall in no case exceed –164 dB(W/m2) in any 4 kHz band for all angles of arrival.

**5.447C** Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. 5.447A and 5.447B shall coordinate on an equal basis in accordance with No. 9.11A with administrations responsible for non-geostationary-satellite networks operated under No. 5.446 and brought into use prior to 17 November 1995. Satellite networks operated under No. 5.446 brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. 5.447A and 5.447B.

**5.447D** The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

**5.447E** *Additional allocation:* The frequency band 5 250-5 350 MHz is also allocated to the fixed service on a primary basis in the following countries in Region 3: Australia, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, Malaysia, Papua New Guinea, the Philippines, Dem. People’s Rep. of Korea, Sri Lanka, Thailand and Viet Nam. The use of this frequency band by the fixed service is intended for the implementation of fixed wireless access systems and shall comply with Recommendation ITU-R F.1613-0. In addition, the fixed service shall not claim protection from the radiodetermination, Earth exploration-satellite (active) and space research (active) services, but the provisions of No. **5.43A** do not apply to the fixed service with respect to the Earth exploration-satellite (active) and space research (active) services. After implementation of fixed wireless access systems in the fixed service with protection for the existing radiodetermination systems, no more stringent constraints should be imposed on the fixed wireless access systems by future radiodetermination implementations. (WRC-15)

**5.447F** In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). The radiolocation service, the Earth exploration-satellite service (active) and the space research service (active) shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-23)**. (WRC-23)

**5.448** *Additional allocation:* in Kyrgyzstan, Romania and Turkmenistan, the frequency band 5 250­ 5 350 MHz is also allocated to the radionavigation service on a primary basis. (WRC-19)

**5.448A** The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. **5.43A** does not apply. (WRC-03)

**5.448B** The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460­ 5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC-03)

**5.448C** The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. (WRC-03)

**5.448D** In the frequency band 5 350-5 470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. **5.449**. (WRC-03)

**5.449** The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

**5.450** *Additional allocation:* in Austria, Azerbaijan, Iran (Islamic Republic of), Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 5 470-5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)

**5.450A** In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. The radiodetermination services shall not impose more stringent conditions upon the mobile service than those stipulated in Resolution **229 (Rev.WRC-23)**. (WRC-23)

1. **5.450B** In the frequency band 5 470-5 650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5 600-5 650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service. (WRC-03)
2. **5.451** *Additional allocation:* in the United Kingdom, the band 5 470-5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. 21.2, 21.3, 21.4 and 21.5 shall apply in the band 5 725-5 850 MHz.
3. **5.452** Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.
4. **5.453** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Côte d’Ivoire, Djibouti, Egypt, the United Arab Emirates, Eswatini, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Jordan, Kenya, Kuwait, Lebanon, Libya, Madagascar, Malaysia, Niger, Nigeria, Oman, Uganda, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People’s Rep. of Korea, Singapore, Somalia, Sri Lanka, Tanzania, Chad, Thailand, Togo, Viet Nam and Yemen, the frequency band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution **229** (**Rev.WRC-23**) do not apply. In addition, in Afghanistan, Angola, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Dem. Rep. of the Congo, Fiji, Ghana, Kiribati, Lesotho, Malawi, Maldives, Mauritius, Micronesia, Mongolia, Mozambique, Myanmar, Namibia, Nauru, New Zealand, Papua New Guinea, Rwanda, Solomon Islands, South Sudan, South Africa, Tonga, Vanuatu, Zambia and Zimbabwe, the frequency band 5 725-5 850 MHz is allocated to the fixed service on a primary basis, and stations operating in the fixed service shall not cause harmful interference to and shall not claim protection from other primary services in the frequency band. (WRC-23)
5. **5.454** *Different category of service:* in Azerbaijan, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. **5.33**). (WRC-12)
6. **5.455** *Additional allocation:* in Armenia, Azerbaijan, Belarus, Cuba, the Russian Federation, Georgia, Hungary, Kazakhstan, Moldova, Uzbekistan, Kyrgyzstan, Romania, Tajikistan, Turkmenistan and Ukraine, the frequency band 5 670-5 850 MHz is also allocated to the fixed service on a primary basis. (WRC-19)
7. **5.456** (SUP-WRC-15)
8. **5.457** In Australia, Burkina Faso, Cote d'Ivoire, Mali and Nigeria, the allocation to the fixed service in the bands 6 440-6 520 MHz (HAPS-to-ground direction) and 6 560-6 640 MHz (ground-to-HAPS direction) may also be used by gateway links for high-altitude platform stations (HAPS) within the territory of these countries. Such use is limited to operation in HAPS gateway links and shall not cause harmful interference to, and shall not claim protection from, existing services, and shall be in compliance with Resolution **150 (WRC-12)**. Existing services shall not be constrained in future development by HAPS gateway links. The use of HAPS gateway links in these bands requires explicit agreement with other administrations whose territories are located within 1 000 kilometres from the border of an administration intending to use the HAPS gateway links. (WRC-12)

**5.457A** In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may communicate with space stations of the fixed-satellite service. Such use shall be in accordance with Resolution **902 (WRC-23))**. In the frequency band 5 925-6 425 MHz, earth stations located on board vessels and communicating with space stations of the fixed-satellite service may employ transmit antennas with minimum diameter of 1.2 m and operate

without prior agreement of any administration if located at least 330 km away from the low-water mark as officially recognized by the coastal State. All other provisions of Resolution **902** (**Rev.WRC-23**) shall apply. (WRC-23)

**5.457B** In the frequency bands 5 925-6 425 MHz and 14-14.5 GHz, earth stations located on board vessels may operate with the characteristics and under the conditions contained in Resolution **902 (Rev.WRC-23)** in Algeria, Saudi Arabia, Bahrain, Comoros, Djibouti, Egypt, United Arab Emirates, Jordan, Kuwait, Libya, Morocco, Mauritania, Oman, Qatar, the Syrian Arab Republic, Sudan, Tunisia and Yemen, in the maritime mobile-satellite service on a secondary basis. Such use shall be in accordance with Resolution **902 (Rev.WRC-23)**. (WRC-23)

**5.457C** In Region 2 (except Brazil, Cuba, French overseas departments and communities, Guatemala, Mexico, Paraguay, Uruguay and Venezuela), the frequency band 5 925-6 700 MHz may be used for aeronautical mobile telemetry for flight testing by aircraft stations (see No. **1.83**). Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to, or claim protection from, the fixed-satellite and fixed services. Any such use does not preclude the use of this frequency band by other mobile service applications or by other services to which this frequency band is allocated on a co-primary basis and does not establish priority in the Radio Regulations. (WRC-15)

**5.457D** In Cambodia, Lao P.D.R. and the Maldives, the frequency band 6 425-7 025 MHz is identified for the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution **220 (WRC-23)** applies. (WRC-23)

**5.457E** The frequency bands 6 425-7 125 MHz in Region 1 and 7 025-7 125 MHz in Region 3 are identified for use by administrations wishing to implement the terrestrial component of International Mobile Telecommunications (IMT). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. Resolution **220 (WRC-23)** applies.

The frequency bands are also used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). (WRC-23)

**5.457F** In Brazil and Mexico, the frequency band 6 425-7 125 MHz is identified for the terrestrial component of International Mobile Telecommunications (IMT). The use of this frequency band for the implementation of IMT is subject to seeking agreement under No. **9.21** with neighbouring countries. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. Resolution **220 (WRC‑23)** applies.

The frequency band is also used for the implementation of wireless access systems (WAS), including radio local area networks (RLANs). (WRC-23)

## Section 3D

**India Footnotes to the column named “India” in the Table of Frequency Allocations**

**IND 12** The use of the frequency bands 74.8-75.2 MHz, 108-117.975 MHz, 328.6-335.4 MHz, 960-1 215 MHz and 5 000-5 250 MHz by the aeronautical radio navigation service and of the bands 108-117.975 MHz and 117.975-137 MHz by the aeronautical mobile (R) service is subject to the provisions of Annex 10 to the Convention on International Civil Aviation and the Standards and Recommended Practices of the International Civil Aviation Organisation (ICAO).

**IND 14** The use of sub bands 448–450 MHz and 1 270–1 295 MHz by wind profiler radars is subject to Resolution **217 (WRC-97)**.

**IND 15** While considering assignments in 2200 - 2300 MHz band, protection of earth stations (a) at a few locations operating in the frequency band 2200-2290 MHz for Space operations, Earth Exploration Satellite Service, Space Research services and (b) at Bylalu in Bangalore operating in the frequency band 2290-2300 MHz band for Space Research (Deep Space), shall be taken into account.

**IND 16** The following frequency bands, or parts thereof, have been identified for implementation of International Mobile Telecommunications **(IMT)**:

|  |  |  |
| --- | --- | --- |
| **Sl.****No.** | **Bands as mentioned in RR** | **Relevant RR Footnotes** |
| 1 | 450-455 MHz | 5.286AA |
| 2 | 455-456 MHz |
| 3 | 456-459 MHz |
| 4 | 459-460 MHz |
| 5 | 460-470 MHz |
| 6 | 470-585 MHz | 5.296A, Notes below |
| 7 | 585-610 MHz |
| 8 | 610-890 MHz | 5.313A, 5.317A, Notes below |
| 9 | 890-942 MHz |
| 10 | 942-960 MHz |
| 11 | 1427-1429 MHz | 5.341C, 5.346A |
| 12 | 1429-1452 MHz |
| 13 | 1452-1492 MHz |
| 14 | 1492-1518 MHz |

|  |  |  |
| --- | --- | --- |
| 15 | 1710-1930 MHz | 5.384A, 5.388 |
| 16 | 1930-1970 MHz |
| 17 | 1970-1980 MHz |
| 18 | 1980-2010 MHz |
| 19 | 2010-2025 MHz |
| 20 | 2025-2110 MHz | 5.388 |
| 21 | 2110-2120 MHz |
| 22 | 2120-2160 MHz |
| 23 | 2160-2170 MHz |
| 24 | 2170-2200 MHz |
| 25 | 2300-2450 MHz | 5.384A |
| 26 | 2500-2520 MHz | 5.384A |
| 27 | 2520-2535 MHz |
| 28 | 2535-2655 MHz |
| 29 | 2655-2670 MHz |
| 30 | 2670-2690 MHz |
| 31 | 3300-3400 MHz | 5.429F, Notes below |
| 32 | 3400-3500 MHz | 5.432A, 5.432B, 5.433A |
| 33 | 3500-3600 MHz |
| 34 | 3600-3670 MHz | Notes below |
| 35 | 24.25-27.5 GHz | 5.338A 5.532AB, Notes below |
| 36 | 27.5-28.5 GHz | Notes below |
| 37 | 37-43.5 GHz | 5.550B, Notes below |
| 38 | 47.2-48.2 GHz | 5.553B, Notes below |
| 39 | 66-71 GHz | 5.559AA, Notes below |

**Note 1**: New assignments to the broadcasting service may not be made in 470-582 MHz range. The frequency range 526-582 MHz may be used for mobile service/IMT in coordination with the broadcasting service.

**Note 2:** The frequency range 582-617 MHz may be used primarily by mobile service/IMT and rural point to point links.

**Note 3**: The frequency range 617-698 MHz may be used for IMT except that certain point to point links, subject to population being less, may be protected initially at few locations. Such sporadic non-IMT users shall vacate the band in near future.

**Note 4:** The frequency band 3300-3400 MHz may be used for implementation of IMT except that initially some usages towards high seas-beyond 50 kms from the coast- and some links in very less populated areas may be permitted for non-IMT usages. Such non-IMT usages shall be shifted to other bands in near future.

**Note 5:** The frequency range 3400-3425 MHz may be used for implementation of IMT except that in six DoS (Department of Space) locations at Thiruvanthapuram, Hassan, Bhopal, Jodhpur, Shillong and A&N Islands, a suitable keep-off distance shall be maintained by the IMT stations.

**Note 6:** The frequency range 3600-3670 MHz may be used for implementation of IMT. The Satellite services may use the C band frequencies beyond 3670 MHz after leaving a guard band of 10 MHz.

**Note 7 (i):** The frequency range 24.25-27.5 GHz may be used for implementation of IMT except that in 25.5-27 GHz frequency range the IMT stations will be required to maintain a keep-off distance of 2.7 kms around five DoS locations at Delhi, Shadnagar, Khambaliya, Hut Bay and Tirunelveli.

**Note 7 (ii):** The frequency range 27.5-28.5 GHz may be allowed for shared use by IMT and Satellite services subject to feasibility.

**Note 8:** While considering the bands 37-43.5 GHz, 47.2-48.2 GHz and 66-71 GHz for the implementation of International Mobile Telecommunications (IMT), the requirements of Satellite based and other services to which these bands might have been allocated in the RR*,* may be taken due care of.

**IND 18** In Region 3, the frequency ranges 406.1-430 MHz, 440-470 MHz, and 4 940-4 990 MHz are harmonized for Public Protection and Disaster Relief (PPDR) applications. In Region 1, the frequency range 380-470 MHz is harmonized for PPDR applications. Additionally, parts of the frequency range 806-894 MHz may also be considered for PPDR applications. See **Resolution 646 (Rev. WRC-19).**

The band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) (see No. 5.286AA). The band 406.1-410 MHz is also allocated to radio astronomy service.

Trunked radio systems are operational in the frequency ranges 336-340 MHz paired with 346-350 MHz, 351-358 MHz paired with 361-368 MHz, 380-389.9 MHz paired with 390-399.9 MHz, 410­ 420 MHz paired with 420-430 MHz, and 806-819 MHz paired with 851-864 MHz. The preferred use of these frequency ranges is as under.

|  |  |  |  |
| --- | --- | --- | --- |
| Sl. No. | Frequency (MHz) | Paired Frequency (MHz) | Proposed Applications/ paired frequency (MHz) |
| 1 | 336-338 | 346-348 | PMRT |
| 2 | 338-340 | 348-350 | PMRT |
| 3 | 351-356 | 361-366 | CMRT |

|  |  |  |  |
| --- | --- | --- | --- |
| 4 | 356-358 | 366-368 | CMRT |
| 5 | 380-389.9 | 390-399.9 | 380-387.5 (PPDR) | 390- 397.5 (PPDR) |
| 387.5-389.9 (CMRT) | 397.5- 399.9 (CMRT) |
| 6 | 410-420 | 420-430 | 410-417.5 (PPDR) | 420- 427.5 (PPDR) |
| 417.5-420 (CMRT) | 427.5- 430 (CMRT) |
| 7 | 440-470 | - | Part of 440-470 MHz may be considered for PPDR. |
| 8 | 806-811 | 851-856 | PPDR |
| 9 | 811-814 | 856-859 | PMRT |
| 10 | 814-819 | 859-864 | PMRT |
| 11 | 819-824 | 864-869 | PMRT/CMRT |
| 12 | 4940-4990 | - | PPDR |

*Abbreviations: PMRT*: Public Mobile Radio Trunking, *CMRT*: Captive Mobile Radio Trunking

*PPDR*: Public Protection and Disaster Relief

Existing radio trunking systems, not in conformity with the above table, will continue to operate until the end of their lifetime. New systems or expansion of existing systems are encouraged to conform to the above table.

Wideband and broadband PPDR applications shall be in accordance with the channel arrangements that promote harmonization to the greatest extent possible. The harmonization shall also be encouraged for the radio trunking systems in general and, in particular, those operating in conformity with the table above. Broadband PPDR application will be encouraged in the Frequency Band 410-420 MHz paired with 420-430 MHz

**IND 24** As per RR 5.340 any emissions in the frequency bands mentioned therein is prohibited.

**IND 26** INSAT system uses the frequency band 2535-2655 MHz for Broadcasting Satellite Service (BSS) downlink providing applications like Radio Networking, Cyclone Warning Dissemination, Meteorological Data Dissemination, Satellite Time and Frequency Dissemination and is planned to provide advanced application like Digital Multimedia.

Requirements of IMT may also be considered in the band subject to coordination.

**IND 27** Subject to ensuring protection to Aeronautical radionavigation service and Radio location service, the band 2700-2900 MHz may also be used for Microwave Multipoint Distribution System (MMDS), including broadband applications. International recognition for such purpose is not affordable.

**IND 28** Use of frequency bands 5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz and 5725­ 5875 MHz for Wireless access services (WAS) and Radio Local Area networks (RLANs) have been exempted from licensing requirement as per conditions notified vide GSR No. G.S.R. 1048(E) dated 18.10.2018.

In the frequency band 5150 to 5875 MHz, satellite operations shall be restricted within 5350-5470 MHz.

**IND 29** Subject to not constraining the use of the frequency band 5 875 to 5 925 MHz by the services to which it has been allocated in the RR, the band may also be considered for V2X technologies/Intelligent Transport Systems.