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| D - Germany | | | |
| **Centralizing office** | **Postal address** | **Telephone, Telefax, Electronic-mail** | **Remarks** |
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| Bundesnetzagentur Referat 511 | Postfach 80 01 55003 Mainz | PHONE: +49 6131 185419 TELEFAX: +49 6131 185602 EMAIL: 511.postfach@bnetza.de |  |
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Stations in the Terrestrial radiocommunication services

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Berlin (IMS)** | Seidelstrasse 49 13405 Berlin Germany | PHONE: +49 30 43741305 TELEFAX: +49 30 43741184 EMAIL: berl8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 52°34'00"N 013°18'00"E | Field strength or power flux-density measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 52°34'00"N 013°18'00"E | Direction-finding measurements | 2 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 52°34'00"N 013°18'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 52°34'00"N 013°18'00"E | Frequency measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 52°34'00"N 013°18'00"E | Bandwidth measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Darmstadt (IMS)** | Auf der Ludwigshöhe 204 64285 Darmstadt Germany | PHONE: +49 6151 170205 TELEFAX: +49 6151 170180 EMAIL: esch8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 49°51'00"N 008°40'00"E | Frequency measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 49°51'00"N 008°40'00"E | Field strength or power flux-density measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 49°51'00"N 008°40'00"E | Direction-finding measurements | 2 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 49°51'00"N 008°40'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 49°51'00"N 008°40'00"E | Bandwidth measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Itzehoe (IMS)** | Postkamp 26 25524 Breitenburg-Nordoe Germany | PHONE: +49 4821 895205 TELEFAX: +49 4821 895180 EMAIL: hamb8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 53°54'00"N 009°31'00"E | Field strength or power flux-density measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 53°54'00"N 009°31'00"E | Direction-finding measurements | 2 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 53°54'00"N 009°31'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 53°54'00"N 009°31'00"E | Frequency measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 53°54'00"N 009°31'00"E | Bandwidth measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Konstanz (IMS)** | Zur Allmannshöhe 27 78464 Konstanz Germany | PHONE: +49 7531 935205 TELEFAX: +49 7531 935183 EMAIL: karl8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 47°41'00"N 009°12'00"E | Frequency measurements | 10 kHz - 22 GHz | H24 |  |
| 47°41'00"N 009°12'00"E | Field strength or power flux-density measurements | 10 kHz - 22 GHz | H24 |  |
| 47°41'00"N 009°12'00"E | Direction-finding measurements | 2 MHz - 3 GHz | H24 |  |
| 47°41'00"N 009°12'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz | H24 |  |
| 47°41'00"N 009°12'00"E | Bandwidth measurements | 10 kHz - 22 GHz | H24 |  |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Krefeld (IMS)** | Lind 55 47509 Rheurdt Germany | PHONE: +49 2845 960205 TELEFAX: +49 2845 960183 EMAIL: koel8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 51°26'00"N 006°28'00"E | Frequency measurements | 10 kHz - 10 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°26'00"N 006°28'00"E | Direction-finding measurements | 2 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°26'00"N 006°28'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°26'00"N 006°28'00"E | Field strength or power flux-density measurements | 10 kHz - 10 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°26'00"N 006°28'00"E | Bandwidth measurements | 10 kHz - 10 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Leipzig (IMS)** | Max Liebermann Str. 63 04157 Leipzig Germany | PHONE: +49 341 9997102 TELEFAX: +49 341 9996181 EMAIL: leip8postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 51°23'00"N 012°22'00"E | Direction-finding measurements | 20 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°23'00"N 012°22'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°23'00"N 012°22'00"E | Frequency measurements | 10 kHz - 18 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°23'00"N 012°22'00"E | Field strength or power flux-density measurements | 10 kHz - 18 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 51°23'00"N 012°22'00"E | Bandwidth measurements | 10 kHz - 18 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **München (IMS)** | Betzenweg 32 81247 München Germany | PHONE: +49 89 38606205 TELEFAX: +49 89 38606183 EMAIL: augs8.postfach@bnetza.de | |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 48°10'00"N 011°28'00"E | Direction-finding measurements | 2 MHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 48°10'00"N 011°28'00"E | Automatic spectrum occupancy surveys | 10 kHz - 3 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 48°10'00"N 011°28'00"E | Frequency measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 48°10'00"N 011°28'00"E | Field strength or power flux-density measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |
| 48°10'00"N 011°28'00"E | Bandwidth measurements | 10 kHz - 40 GHz |  | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time) |

Stations in the Space radiocommunication services

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** | |
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| **Leeheim** | Satellitenmessstelle 64560 Riedstadt-Leeheim Germany | PHONE: +49 6158 9400 TELEFAX: +49 6158 940180 EMAIL: esch16.postfach@bnetza.de | |

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| **1. Geographical coordinates** |
| |  | | --- | | 49°51'00"N | | 008°24'00"E | |
| **2. Hours of service** |
| |  | | --- | | April to October: 0500-1400 h from Monday to Friday November to March: 0600-1500 h from Monday to Friday | |
| **3. Information on antennas in use** |
| |  | | --- | | Dipole antenna array for frequency range (a); 12 m Cassegrain antenna for frequency ranges (b), (c), (e), (f); 8.5 m Cassegrain antenna for frequency ranges (d) and (i); 7 m prime focus antenna for frequency ranges (g) and (h). | |
| **4. Range of azimuth and elevation angles** |
| |  | | --- | | 360°, 90° | |
| **5. Maximum attainable accuracy in determining orbital positions of space stations** |
| |  | | --- | | 0.2/f[GHz] [no orbital position measurements within frequency range (a)]. | |
| **6. Information on system polarization** |
| |  | | --- | | Linear polarization (horizontal and vertical) in all frequency ranges. Additional circular polarization (RHC and LHC) in the frequency ranges (d) to (i). In frequency range (d) fixed polarization (RHC and LHC). Polarization angle adjustment in frequency ranges (d), (e), (f), (g), (h) and (i). | |
| **7. System noise temperature** |
| |  | | --- | | (a) 130 MHz - 1000 MHz: 650 K (b) 1500 MHz - 1800 MHz: 380 K (c) 2100 MHz - 2300 MHz: 380 K (d) 3400 MHz - 4200 MHz: 180 K (e) 4300 MHz - 8500 MHz: 250 K (f) 10.7 GHz - 12.75 GHz: 150 K (g) 1 GHz - 12.75 GHz: 200 K (h) 12.5 GHz - 26.5 GHz: 350 K (i) 17.7 GHz - 22 GHz: 318 K | |
| **8. Ranges of frequencies with the maximum attainable accuracy of frequency measurement for each frequency range** |
| |  | | --- | | (a) 130 MHz - 1000 MHz: 1 × 10-12 (b) 1500 MHz - 1800 MHz: 1 × 10-12 (c) 2100 MHz - 2300 MHz: 1 × 10-12 (d) 3400 MHz - 4200 MHz: 1 × 10-12 (e) 4300 MHz - 8500 MHz: 1 × 10-12 (f) 10.7 GHz - 12.75 GHz: 1 × 10-12 (g) 1 GHz - 12.75 GHz: 1 × 10-12 (h) 12.5 GHz - 26.5 GHz: 1 × 10-12 (i) 17.7 GHz - 22.0 GHz: 1 × 10-12 | |
| **9. Ranges of frequencies in which field strength or power flux-density measurements can be performed** |
| |  | | --- | | (a) 130 MHz - 1000 MHz (b) 1500 MHz - 1800 MHz (c) 2100 MHz - 2300 MHz (d) 3400 MHz - 4200 MHz (e) 4300 MHz - 8500 MHz (f) 10.7 GHz - 12.75 GHz (g) 1 GHz - 12.75 GHz (h) 12.5 GHz - 26.5 GHz (i) 17.7 GHz - 22 GHz | |
| **10. Minimum value of measurable field strength or power flux-density with indication of attainable accuracy of measurement** |
| |  | | --- | | (a) -159... -151 dBW/m²; ± 2.5 dB (b) -175 dBW/m²; ± 1.5 dB (c) -175 dBW/m²; ± 1.5 dB (d) -176 dBW/m²; ± 1.5 dB (e) -175 dBW/m²; ± 1.5 dB (f) -175 dBW/m²; ± 1.5 dB (g) -165 dBW/m²; ± 1.5 dB (h) -164 dBW/m²; ± 1.5 dB (i) -169 dBW/m²; ± 1.5 dB Bandwidth 4 kHz, S/N ≥ 10 dB. | |
| **11. Information available for bandwidth measurements** |
| |  | | --- | | Bandwidth measurements in accordance with the methods described in the Spectrum Monitoring Handbook. | |
| **12. Information available for spectrum occupancy measurements** |
| |  | | --- | | Computer controlled receiving system using directional antennas for frequency ranges (a) to (i) or omni-directional antennas for frequencies < 2500 MHz. Up to 4 independent frequency bands of 600 MHz each are in time shift mode recordable. The results are presented graphically as spectrograms. | |
| **13. Information available for orbit occupancy measurements** |
| |  | | --- | | Automatic orbit occupancy measurements are carried out in the frequency ranges (a) to (i). | |

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