



# International Amateur Radio Union Region 1

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Subject:	<b>Differences in Region 1, 2 and 3 in the HF-Band plans</b>		
Society:	<b>DARC</b>	Country:	<b>Germany</b>
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## Information Paper

### 1. Background

Since the introduction in 2005 of a Region 1 HF band plan based on maximum bandwidth for modes in certain parts of the bands, it has been understood that harmonization of the band plans in all three Regions would be advantageous.

Exchange of experience with a band planning group in Region 2 has led meanwhile to a HF band plan in that region which is very similar to the band plan of Region 1.

The situation of HF band planning in Region 3 is still quite different. The Region 3 HF band plan knows still the subdivision by major operation modes like CW and Phone, beside Narrow Band Modes.

### 2. Situation

As said before the subdivisions in the HF band plan for Region 1 and Region 2 are quite similar, but not the definitions. A better harmonisation of band plans can be reached if also the definitions and notes would be similar in all regions.

This paper informs about the actual differences in definitions and notes for the 3 regions.

## Region 1

<http://www.iaru-r1.org/index.php/spectrum-and-band-plans/hf>

### Definitions

**All modes** - CW, SSB and those modes listed as Centres of Activity, plus AM (Consideration should be given to adjacent channel users).

**Image modes** - Any analogue or digital image modes within the appropriate bandwidth, for example SSTV and FAX.

**Narrow band modes** - All modes using up to 500 Hz bandwidth, including CW, RTTY, PSK etc.

**Digimodes** - Any digital mode used within the appropriate bandwidth, for example RTTY, PSK, MT63 etc.

### Notes

The frequencies in the band plan are understood as “transmitted frequencies” (Not those of the suppressed carrier!)

To prevent any out of band transmission the maximum dial setting for USB Voice mode should be 3 kHz below upper band edge on bands 20 m to 10 m.

(\* ) Lowest dial setting for LSB Voice mode: 1 843, 3 603 and 7 053 kHz

(##) Highest dial setting for USB Voice mode on the 60 m band: 5 363 kHz

CW QSOs are accepted across all bands, except within beacon segments. (Recommendation DV05\_C4\_Rec\_13)

Amplitude modulation (AM) may be used in the telephony sub-bands providing consideration is given to adjacent channel users. (NRRL Davos 05).

### Sideband Usage

Below 10 MHz lower sideband (LSB) is recommended and above 10 MHz use upper sideband (USB).

The exception to this is on the 5 MHz band where USB is recommended.

## Region 2

<http://www.iaru-r2.org/documents/explorer/files/Plan%20de%20bandas%20%7C%20Band-plan/R2%20Band%20Plan%202016.pdf>

### Definitions

**ACDS:** Automatic Controlled Data Stations, including Store and Forward stations (not Digital Voice Repeaters and Internet Voice Gateways). In the case of digital beacons, it's recommended to insert CW on the usual schedule for non-machine recognition and use narrow BW as possible. ACDS are allowed only when directly specified on the segment (except those on-board satellites and spacecraft - able to transmit on specified satellites segments - and onboard near space stations - see "NSS"). Unattended operations are restricted in HF (see "Unmanned/unattended transmitting stations").

**AM:** DSB AM phone is allowed with maximum of 6 kHz BW. The AM signal can be placed when: a) the segment is permitted for "all modes" with sufficient bandwidth; b) the BW field is marked with "(\*)," allowing AM with maximum 6 kHz BW as an exception.

**Application:** The applications column indicates the usage of a segment. In case only one application (or number of applications) is (are) exclusively allowed, the word "exclusive" is added.

**Band usage:** The correct usage of each band segment is defined by the combination of 3 characteristics: the **mode**, the **maximum bandwidth** (BW) and the **application**.

**Bandwidth:** The maximum bandwidth determines the maximum spectral width (-6 dB points) of all emissions allowed in a segment. Sets the power output and modulation levels minimum as possible for do not exceed the maximum expected BW. Unless specified will be no restrictions in respective segment. Best practice should be observed to avoid adjacent band interference.

**Broadband Applications:** Broadband applications may be used for any combination of high-speed data (e.g. 802.11 protocols), Amateur Television and other high-bandwidth activities. Division into channels and/or separation of uses within these segments may be done regionally based on needs and usage.

**Contests:** Contest activity shall not take place on: 2 200 m (136 kHz), 630 m (472 kHz), 60 m (5.3 MHz), 30 m (10 MHz), 17 m (18 MHz) and 12 m (24 MHz). Non-contesting radio amateurs are encouraged to also use the contest-free bands during large international contests. Member societies are encouraged to publish contest operating segments clearly in the rules of their contests and that those segments are considered with due respect to the IARU band plans.

**CW:** Telegraphy (A1A) QSO is permitted over the whole band, but preferably not in the beacon segments and repeaters input.

**DM:** Digital Modes: Any mode devoted to digital data communication restricted to the specified bandwidth and application of the segment (not for Digital Voice and Internet Voice Gateways). Examples: RTTY, PSK, FSK, etc.

**DV:** Digital Voice: Any mode based on digital encoded voice, restricted to the specified bandwidth and application of the segment. The non-voice digital embedded content must be an ancillary data, not the main purpose of the communication, except during emergency communications. Digital Voice users should first check if the channel is already in use by other stations and modes (including analog).

**Emergency communications:** Amateur Radio emergency communications are the preferred application over all other usage, especially on their specified frequencies during rescue operations.

**Frequencies:** The announced frequencies in the band plan are understood as “transmitted frequencies” and not those of the suppressed carrier.

**IBP:** International Beacon Project: Worldwide network of high-frequency radio beacons organized by IARU, sharing the same single frequency per band (20, 17, 15, 12 and 10 meters).

**Image Modes:** Any analog or digital image modes within the appropriate bandwidth of the segment. Examples: SSTV, FAX.

**IVG:** Internet Voice Gateways: Simplex DV/FM communications linked by Internet (via VoIP and/or related systems) to establish a network. IVG are allowed only when directly specified on the segment.

**NSS - Near Space Stations:** Equipment located in temporary Near Space Stations (such as those carried by High Altitude Balloons) can transmit carefully on any frequency; exceptions are the segments with “exclusive” usage where “NSS” are not applied. NSS must follow the BW and mode restrictions of the segment and observe carefully the usual occupation of the band on the related region to avoid harmful interference. For longer missions and NSS crossing international and regional boundaries, extra care must be observed in harmonization of different allocations.

**Point-to-point QSO:** All frequencies can be used to establish point-to-point QSO with the specified mode and BW. However, segments devoted to beacons, repeaters and satellites should be avoided.

**Repeaters:** Repeaters are cited on band plan for voice traffic and also carry ancillary data in the cases of DV mode repeaters. Input segments could also be used for authorized links and controls related to the particular repeater input. Repeaters are allowed only when directly specified on the segment (except those on-board satellites and spacecraft - able to transmit on specified satellite segments - and on board near space stations - see “NSS”).

**SSB, AM and FM:** These modes are cited on the band plan for analog phone communications only (not for Digital Modes or Digital Voice).

**Unmanned/unattended transmitting stations:** IARU member societies are requested to limit this activity on HF bands. It is recommended that any unmanned/unattended transmitting stations on HF shall be activated only under operator control except for beacons agreed with IARU beacon coordinator or specially licensed experimental stations.

**USB/LSB:** For SSB phone operations below 10 MHz use lower sideband (LSB); above 10 MHz use upper sideband (USB). Exception: On 60 m band (5.3 MHz) use upper sideband (USB)

## Region 3

<http://iaru-r3.org/documents/> → R3-004 Region 3 - Band Plan → download

### Basic Principles

The Basic Principles underlying the IARU Region 3 Band Plans are:

(1) In all cases of conflict between a band plan and the national regulations of a country, the latter shall prevail. However, it is not recommended to use frequencies outside of the band plan for the amateur satellite service and it should be noted that the IARU cannot coordinate the amateur satellite usage of frequencies outside of the band plan.

(2) Nothing in these band plans shall be construed as prohibiting different national arrangements, provided that harmful interference is not caused to stations in countries operating in accordance with the regional band plan.

(3) Notwithstanding item (2) above, Member Societies of IARU Region 3 are strongly urged to use these regional band plans as a basis for their national band plans.

### Legends

The “Legends”/ “Abbreviations” used are:

CoA: Emergency “Centre of Activity” frequency (IARU recommended)

EME: Earth-Moon-Earth, Meteor Scatter, Auroral Scatter and other weak-signal modes

NB: Narrow bandwidth modes including CW, RTTY, Packet and modes with similar bandwidth not exceeding 2 kHz.

Phone: Phone operation includes SSTV, FAX and modes with similar bandwidth not exceeding 6 kHz.

Satellite: This segment should be kept clear of other operating modes.

WB: Wide bandwidth modes including FM.