

## 144 - 146 MHz BANDPLAN ( San Marino 2002)

Frequency	Maximum	MODE	USAGE
144.000	500Hz	Telegraphy (a)	EME exclusive
144.035			
144.035	500Hz	Telegraphy(a)	144.050 Telegraphy calling
144.105			144.100 Random MS(m)
144.135	500Hz	Telegraphy, MGM	144.138 PSK31 center of activity
144.150			144.140-144.150 FAI & EME activity telegraphy
144.150	2700Hz	Telegraphy, SSB, MGM	144.150-144.160 FAI & EME activity SSB
144.165			
144.165	2700Hz	Telegraphy & SSB	144.195-144.205 Random MS SSB (m)
144.360			144.300 SSB calling
144.360	2700Hz	Telegraphy, SSB, MGM	144.370 FSK441 Random calling(m)
144.399			
144.400	500Hz	Telegraphy, MGM	Beacons exclusive(b)
144.490			
144.500	20kHz	All mode (f)	144.500 SSTV calling
144.794			144.525 ATV SSB talk back
			144.600 RTTY calling(n)
			144.630-144.660 Linear Transponder
			OUT
			144.660-144.690 Linear Transponder IN
			144.700 FAX calling
			144.750 ATV talk back
144.794	12kHz	MGM (h)	144.800 APRS
144.990			
144.994	12kHz	FM	Repeater Input exclusive (c)
145.194			
145.194-145.206	12kHz	FM	Space communication (p)
145.206			145.300 RTTY local
145.5935	12kHz	FM	145.500 (mobile) calling

145.594	12kHz	FM	Repeater Output exclusive (c,d)
145.7935			
145.794	12kHz	FM	Space communication (p)
145.806			
145.806	12kHz	ALL MODE (e)	Satellite exclusive
146.000			

## NOTES ON THE 144 - 146 MHz BANDPLAN

### 1. IARU REGION 1 BANDPLAN

The following notes are part of the officially adopted IARU Region 1 bandplan, and all member societies should strongly promote adherence to the recommendations made in these notes.

#### 1.1. General

- i. In Europe no input or output channels of telephony repeaters shall be allowed to operate between 144.000 and 144.794 MHz.
- ii. Except in the part of the band allocated to the Amateur Satellite Service and the linear transponders it is not allowed to use input- or output frequencies in the 145 MHz band for repeaters with in- or output in other amateur bands (Miskolc-Tapolca 1978, San Marino 2002).
- iii. No packet-radio networks will be set up in the 145 MHz band (revised Lillehammer 1999)  
It is recognised that in some parts of Region 1 the introduction of packet-radio may require the use of access frequencies in the 144 - 146 MHz band for a limited time (Düsseldorf 1989).

Note. The parts of Region 1 meant are those parts with low amateur population and/or those at the periphery of the Region, where exceptions can be tolerated as these do not harm the orderly use of the band in the parts of Region 1 where there is a greater pressure on the available spectrum space. In the latter part of the Region the second paragraph of the footnote should never be used to justify ignoring the first part for a considerable time.

- iv. Beacons, irrespective of their ERP, will have to be situated in the beacon part of the band.

#### 1.2. Footnotes

- a. Telegraphy is permitted over the whole band, but preferably not in the beacon band; Telegraphy exclusive between 144.000 - 144.135 MHz.
- b. Within IARU Region 1 the frequencies for beacons with an ERP of more than 50 Watts are coordinated by the IARU Region 1 Beacon Coordinator; the frequencies for beacons with an ERP of 10 Watts or more shall be communicated to the Beacon Coordinator. (see section IX).
- c. For technical standards on NBFM and repeaters see section VIb

If there is a real need for more repeater channels (see section VIIIa ! ), it is recommended that Societies or Repeater Groups consider setting up a repeater system on the higher frequency band(s).

Further to this subject the following recommendation was adopted in De Haan, 1993:

For FM repeater and simplex operation in the 144 to 146 MHz band IARU Region 1 will change to a genuine 12.5 kHz channel spacing system.

Furthermore in Tel Aviv, 1996 it was decided that societies shall promote the use of the 12.5 kHz channel spacing standard for NBFM channels in order to effectively implement the 12.5 kHz system .

For the numbering of NBFM telephony channels, see annex 2 to this section.

- d. Established simplex frequencies on repeater output channels may be retained.
- e. In view of the important public relations aspect of amateur satellite activities, it was decided at the IARU Region 1 Conference in Miskolc-Tapolca (1978) that:
  - i) AMSAT will be allowed to use the band 145.8 - 146.0 MHz for amateur satellite activity.  
  
This decision was re-confirmed at the IARU Region 1 Conference in Brighton (1981).
  - iii) see also footnote p
- f. No unmanned stations shall use the all-mode segment, except for linear transponders (Tel Aviv 1996, San Marino 2002)
- g. Attention is drawn to section 1.1. point iii of these Bandplan notes!
- h. Network stations shall only operate in the part of the 145 MHz band allocated to Digital Communications and will be permitted only for a limited time. Such network stations should also have access ports on other VHF/UHF or Microwave bands and should not use the 145 MHz band to forward traffic to other network stations. In view of the time limitation the set-up of new network stations is not encouraged (De Haan, 1993).

Unmanned packet radio stations are only allowed in the segment 144.800 - 144.990 MHz. Outside of this segment the signal level produced by those stations shall be not larger than 60 dB below the carrier level (measured in a 12 kHz bandwidth). Any other unmanned packet radio and digital access points must cease operation not later than 31 December 1997.(Tel Aviv 1996).

## 2. USAGE

The following notes are referring to the Usage column in the bandplan. As already set out in the introduction to section IIC, in the right amateur spirit operators should take notice of these agreements which are made for operating convenience, but no right to reserved frequencies can be derived from a mention in the Usage column or from the following notes.

At the meeting of the VHF/UHF/Microwaves Committee in Vienna, March 1992, the following recommendation was adopted:

Societies should publish the use of 144.140 - 144.160 MHz as an alternative for EME operation. The results of this test should be monitored with the aim of incorporating this segment as EME alternative into the Usage part of the bandplan if successful.

## 2.1. Footnotes

- m. See procedures set out in section Vb.
- n. Publicity should be given to the usage of frequencies around 144.600 MHz by RTTY stations , in order to keep these frequencies clear from other traffic and to avoid interference with those RTTY stations.
- p. For NBFM voice communications with special stations like manned spacecraft it is recommended to use 145.200 MHz for simplex operation or 145.200/145.800 MHz for split-channel operation (Vienna 1995/Tel Aviv 1996).