

## **902-3500 MHz Band Plans for Weak Signal Users**

### **Prepared for the Joint VHF-UHF Conference Mt. Airy VHF Radio Club & North East Weak Signal Group -- Oct. 13, 2012**

In 2010, the FCC and the NTIA started studies with the aim of re-allocating 500 MHz between 225 and 4400 Mhz to Commercial Broadband usage. In early 2011 the ARRL Board of Directors established a Notional Broadband Committee to assess threats to Amateur spectrum, develop arguments and recommend strategies to protect Amateur allocations in that range.

In July of 2011, the ARRL established the UHF/Microwave Band Plan Committee to update the Amateur Band Plans from 902 to 3500 MHz. By July of this year, that committee had recommended and the ARRL Board of Directors had voted to create new band plans for that range of spectrum.

Considering the fact that the ARRL recommended band plans in this range were extremely limited in scope and had not been changed since the early 1990's, the whole process of creating new band plans in the 900 & Microwave region was done very quickly and without much fanfare. There was notice of the process on the ARRL website, but the major users of this area of spectrum, members of the dozen or more weak signal clubs and societies, were not invited to input. Nor was the request for usage input and comments sent to the microwave user's communication vehicle, the (MW) Microwave Remailer.

Nevertheless, quite a number of users of this spectrum submitted comments during the short windows set by the committee. And, except for issues with the 902-928 band plan, the other plans, for the most part, have protected weak signal use.

The 902-928 Band Plan encompasses the entire band, and was approved by the North East Weak Signal Group on Sept., 25, 2005 and by the Mt. Airy VHF Radio Club, the "Packrats", on April 19, 2012

#### **NEWS/Mt Airy/ CSMA Band Plan 902.000-928.000 MHz**

902.0000-902.4000 Weak Signal, SSB, CW, Beacons, EME  
902.1000 National Calling Frequency-Weak Signal USB, CW  
902.2500 SSB/CW/FM DX Calling Frequency  
902.3000-902.3750 CW Propagation Beacons, Simplex, Experimental & Mixed Use  
902.4000-902.4875 FM Repeater Inputs, 25kHz channels-11-16kW, 12.5kHz channels-6-11k BW\*  
902.5000 FM Simplex Calling Frequency  
902.5125-902.8750 FM Repeater Inputs, 25kHz channels-11-16kW, 12.5kHz channels-6-11k BW\*  
902.9000-903.4000 Weak Signal, SSB, CW, Beacons, EME.  
903.1000 National Calling Frequency-East Coast & Alternate-Weak Signal-USB, CW  
903.2500 SSB/CW/FM DX Calling Frequency  
903.3000-903.3500 CW Propagation Beacons  
903.4000-905.0000 Mixed use & Experimental  
905.0000-906.000 Digital, Links, Experimental & Mixed Use  
906.5000 FM Simplex Calling Frequency  
906.0000-910.0000 FM Repeater Inputs, Links,& Coordinated Uses\*  
910.0000-917.0000 Amateur TV (primary), Experimental & Mixed Use (secondary)\*  
917.0000-918.0000 Digital, Links, Experimental & Mixed Use  
918.5000 FM Simplex Calling Frequency  
918.0000-922.0000 FM repeater Outputs, Links,& Coordinated Uses\*

922.0000-927.0000 Experimental & Wideband Digital Repeaters\*  
927.0000-927.4000 FM Simplex & Links  
927.4000-927.4875 FM Repeater Outputs, 25kHz channels-11-16kBW, 12.5kHz channels-6-11k BW\*  
927.5000 FM Simplex Calling Frequency  
927.5250-927.8750 FM Repeater Outputs, 25kHz channels-11-16kBW, 12.5kHz channels-6-11k BW\*  
927.9000-927.9250 CW Propagation Beacons  
927.9000-928.0000 Weak Signal, SSB, CW, EME  
\*Repeaters will be coordinated only in the segments indicated

**The following segments are important to weak signal and contest operators:**

902.0000-902.4000 Weak Signal, SSB, CW, Beacons, EME  
902.1000 National Calling Frequency-Weak Signal USB, CW  
902.2500 SSB/CW/FM DX Calling Frequency (primarily used as an FM simplex freq during contests)  
902.3000-902.3750 CW Propagation Beacons, Simplex, Experimental & Mixed  
902.5000 FM Simplex Calling Frequency (see 927.500 pair)  
902.9000-903.4000 Weak Signal, SSB, CW, Beacons, EME.  
903.1000 National Calling Frequency-East Coast & Alternate-Weak Signal-USB,CW  
903.2500 SSB/CW/FM DX Calling Frequency (primarily used as an FM simplex freq during contests)  
903.3000-903.3500 CW Propagation Beacons  
906.5000 FM Simplex Calling Frequency (not used very much)  
918.5000 FM Simplex Calling Frequency (not used very much)  
927.5000 FM Simplex Calling Frequency (used for general FM simplex & contest contacts across the country, note that this pairs with 902.500 as a 25MHz split)  
927.9000-927.9250 CW Propagation Beacons  
927.9000-928.0000 Weak Signal, SSB, CW, EME

On Sept. 25, 2005, after much work, the Connecticut Spectrum Management Association (CSMA), which is the repeater coordination body for Connecticut, and the North East Weak Signal Group (NEWS), which is the weak signal organization of record representing Amateurs in the six New England states and Eastern New York, completed agreement of the following Band Plan for the 902-928 MHz amateur band.

As much as possible, uses in other areas were considered when designing this plan. Many of the bandplan segments were created specifically to agree with those segments created in existing the ARRL bandplan, the SERA coordination plan for the Southeast US, and the Florida Repeater Council. It would be good if each regional weak signal group would consider the NEWS bandplan, and either adopt it, or a version of it, or even create their own bandplan consistent with usage in their region of the country.

The 1240-3500 MHz band plans cover only the portions used by Weak Signal Operators. The North East Weak Signal Group (NEWS) approved the following Band Plans for the Weak Signal and EME segments of the 1.2-47 GHz Amateur Radio Bands at the general meeting held on March 17, 2012 in Longmeadow, Massachusetts. NEWS serves members in the 6 New England States, Eastern New York, nearby areas of Canada, and has members in many other parts of the country.

**1296.000-1297.000 Weak Signal & EME -- Region 2**

1296.000-1296.100 EME, Digital, SSB, CW  
1296.060-1296.070 Digital EME Segment  
1296.100 Weak Signal-SSB & CW Call Frequency  
1296.100-1296.250 Weak Signal-SSB, CW  
1296.150 Digital Weak Signal Terrestrial Call Frequency  
1296.250 Weak Signal-NBFM & FM Call Frequency  
1296.250-1296.300 Weak Signal-All Modes  
1296.300-1296.400 Propagation Beacons-- Region 2  
1296.400-1296.800 Weak Signal-All Modes  
1296.800-1297.000 Propagation Beacons-- Region 2 & Region 1

**2304.000-2305.000 Weak Signal & EME -- Region 2**

2304.000-2304.100 EME, Digital, SSB, CW  
2304.060-2304.070 Digital EME Segment  
2304.100 Weak Signal-SSB & CW Call Frequency  
2304.100-2304.250 Weak Signal-SSB, CW  
2304.150 Digital Weak Signal Terrestrial Call Frequency  
2304.250 Weak Signal-NBFM & FM Call Frequency  
2304.250-2304.300 Weak Signal-All Modes  
2304.300-2304.400 Propagation Beacons-- Region 2  
2304.400-2304.800 Weak Signal-All Modes  
2304.800-2305.000 Propagation Beacons-- Region 2 & Region 1

**3400.000-3401.000 Weak Signal & EME -- Region 1 & 2**

3400.000-3400.150 EME Segment  
3400.060-3400.070 Digital EME Segment  
3400.100 EME Call Frequency  
3400.150 Digital Terrestrial Call Frequency  
3400.150-3400.250 Weak Signal-SSB, CW, Digital Terrestrial  
3400.200 Weak Signal-SSB & CW Call Frequency  
3400.250 Weak Signal-NBFM & FM Call Frequency  
3400.250-3400.300 Weak Signal-All Modes  
3400.300-3400.400 Propagation Beacons-- Region 2  
3400.400-3400.800 Weak Signal-All Modes  
3400.800-3401.000 Propagation Beacons-- Region 2 & Region 1

### **3455.500-3457.000 Weak Signal & EME -Region 2**

3455.500-3456.100 EME, Digital, SSB, CW  
3456.060-3456.070 Digital EME Segment  
3456.100 Weak Signal-SSB & CW Call Frequency  
3456.100-3400.250 Weak Signal-SSB, CW  
3456.150 Digital Weak Signal Terrestrial Call Frequency  
3456.250 Weak Signal-NBFM & FM Call Frequency  
3456.250-3456.300 Weak Signal-All Modes  
3456.300-3400.400 Propagation Beacons-- Region 2  
3456.400-3456.800 Weak Signal-All Modes  
3456.800-3457.000 Propagation Beacons-- Region 2 & Region 1

### **5759.000-5761.000 Weak Signal & EME - Region 2**

5759.000-5760.020 Propagation Beacons  
5759.000-5760.100 EME, Digital, SSB, CW  
5760.060-5760.070 Digital EME Segment  
5760.100 Weak Signal-SSB & CW Call Frequency  
5760.100-5760.250 Weak Signal-SSB, CW  
5760.150 Digital Weak Signal Terrestrial Call Frequency  
5760.250 Weak Signal-NBFM & FM Call Frequency  
5760.250-5760.300 Weak Signal-All Modes  
5760.300-5760.400 Propagation Beacons  
5760.400-5760.800 Weak Signal-All Modes  
5760.800-5761.000 Propagation Beacons

### **10367.000-10369.000 Weak Signal & EME -- Region 2**

10367.000-10368.020 Propagation Beacons  
10367.000-10368.100 EME, Digital, SSB, CW  
10368.060-10368.070 Digital EME Segment  
10368.100 Weak Signal-SSB & CW Call Frequency  
10368.100-10368.250 Weak Signal-SSB, CW  
10368.150 Digital Weak Signal Terrestrial Call Frequency  
10368.250 Weak Signal-NBFM & FM Call Frequency  
10368.250-10368.300 Weak Signal-All Modes  
10368.300-10368.400 Propagation Beacons  
10368.400-10368.800 Weak Signal-All Modes  
10368.800-10369.000 Propagation Beacons

### **24191.000-24193.000 Weak Signal & EME -- Region 2**

24191.000-24192.020 Propagation Beacons  
24191.000-24192.100 EME, Digital, SSB, CW  
24192.060-24192.070 Digital EME Segment  
24192.100 Weak Signal-SSB & CW Call Frequency  
24192.100-24192.250 Weak Signal-SSB, CW  
24192.150 Digital Weak Signal Terrestrial Call Frequency  
24192.250 Weak Signal-NBFM & FM Call Frequency  
24192.250-24192.300 Weak Signal-All Modes  
24192.300-24192.400 Propagation Beacons  
24192.400-24192.800 Weak Signal-All Modes  
24192.800-24193.000 Propagation Beacons

## **47087.000-47089.000 Weak Signal & EME - Region 2**

47087.000-47088.020 Propagation Beacons  
47087.000-47088.100 EME, Digital, SSB, CW  
47088.060-47088.070 Digital EME Segment  
47088.100 Weak Signal-SSB & CW Call Frequency  
47088.100-47088.250 Weak Signal-SSB, CW  
47088.150 Digital Weak Signal Terrestrial Call Frequency  
47088.250 Weak Signal-NBFM & FM Call Frequency  
47088.250-47088.300 Weak Signal-All Modes  
47088.300-47088.400 Propagation Beacons  
47088.400-47088.800 Weak Signal-All Modes  
47088.800-47089.000 Propagation Beacons

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### ***Here are the 2012 ARRL Band Plans:***

#### **ARRL 2012 Band Plan -- 33 Centimeters (902-928 MHz):**

902.000-902.075 FM / other including DV Or CW/SSB Repeater inputs 25 MHz split paired with those in 927.000-927.075 or Weak signal, 12.5 kHz channel spacing Note 2)  
902.075-902.100 CW/SSB Weak signal  
902.100 CW/SSB Weak signal calling Regional option  
902.100-902.125 CW/SSB Weak signal  
902.125-903.000 FM/other including DV  
Repeater inputs 25 MHz split paired with those in 927.1250-928.0000 12.5 kHz channel spacing  
903.000-903.100 CW/SSB Beacons and weak signal  
903.100 CW/SSB Weak signal calling Regional option  
903.100-903.400 CW/SSB Weak signal  
903.400-909.000 Mixed modes Mixed operations including control links  
909.000-915.000 Analog/digital Broadband multimedia including ATV, DATV and SS Notes 3) 4)  
915.000-921.000 Analog/digital Broadband multimedia including ATV, DATV and SS Notes 3) 4)  
921.000-927.000 Analog/digital Broadband multimedia including ATV, DATV and SS Notes 3) 4)  
927.000-927.075 FM / other including DV Repeater outputs  
25 MHz split paired with those in 902.0000-902.0750 12.5 kHz channel spacing  
927.075-927.125 FM / other including DV Simplex  
927.125-928.000 FM / other including DV  
Repeater outputs 25 MHz split paired with those in 902.125-903.000 12.5 kHz channel spacing Notes 5) 6)

- 1) Significant regional variations in both current band utilization and the intensity and frequency distribution of noise sources preclude one plan that is suitable for all parts of the country. These variations will require many regional frequency coordinators to maintain band plans that differ in some respects from any national plan. As with all band plans, locally coordinated plans always take precedence over any general recommendations such as a national band plan.
- 2) May be used for either repeater inputs or weak-signal as regional needs dictate
- 3) Division into channels and/or separation of uses within these segments may be done regionally based on needs and usage, such as for 2 MHz-wide digital TV.
- 4) These segments may also be designated regionally to accommodate alternative repeater splits.
- 5) Simplex FM calling frequency 927.500 or regionally selected alternative.
- 6) Additional FM simplex frequencies may be designated regionally.

**23 Centimeters (1240-1300 MHz):**

1294.000-1295.000 FM FMsimplex National FM simplex calling frequency 1294.500  
1295.000-1297.000 Narrow Band Segment  
1295.000-1295.800 Various Narrow Band Image, Experimental  
1295.800-1296.080 CW, SSB, digital, EME  
1296.080-1296.200 CW, SSB Weak Signal CW, SSB calling frequency 1296.100  
1296.200-1296.400 CW, digital Beacons  
1296.400-1297.000 Various General Narrow Band

**13 Centimeters (2300-2310 and 2390-2450 MHz):**

2303.75-2304.000 SSB, CW, digital weak-signal  
2304.000-2304.100 3kHz or less Weak Signal EME Band  
2304.100-2304.300 3kHz or less SSB, CW, digital weak-signal (Note1)  
2304.300-2304.400 3kHz or less Beacons  
2304.400-2304.750 6kHz or less SSB, CW, digital weak-signal & NBFM  
2304.750-2305.000 < 50 kHz Analog & Digital; paired with 2394.750 - 2395  
Note 1: 2304.100 is the National Weak-Signal Calling Frequency  
Note 4: 2424.100 is the Japanese EME transmit frequency

**3300-3500 MHz:**

3400.000-3410.000 10.0 CW, SSB, NBFM 6 kHz or less Amateur Satellite Communications  
3400.000-3400.300 0.3 CW, SSB, Digital 3 kHz or less Weak Signal EME Band  
3400.300-3401.000 0.7 CW, SSB, Digital 3 kHz or less Terrestrial Weak Signal Band - Future (Note 2)  
3400.100 CW, SSB, Digital EME Calling Frequency  
3455.500-3457.000 1.5 CW, SSB, NBFM, Digital 6 kHz or less Terrestrial Weak Signal Band - Legacy (Note 2)  
3456.100 6 kHz or less Weak Signal Terrestrial Calling Frequency  
3456.300-3457.000 0.1 CW, Digital 1 kHz or less Propagation Beacons  
Note 2 – Weak Signal Terrestrial legacy users are encouraged to move to 3400.3 to 3401.0 MHz as time and resources permit.

ARRL 1988 Band Plan: 5650-5925 MHz: 5760.3-5760.4 Propagation beacons

ARRL 1988 Band Plan: 10.00-10.50 GHz:

10.368.1 Narrow band calling frequency  
10.368.3-10.368.4 Propagation beacons