

FLORIDA REPEATER COUNCIL  
PROPOSED NARROW BAND Rules for 2 METERS Updated Oct 2010

Dec 2, 2010

To be considered by the FRC Board

The long term growth of the demand for 2-meter frequencies in Florida indicates that we must act to serve the future needs of the ham community. Some of this demand comes from the desire to implement newer technology repeater systems. Most of these new technology systems such as DIGITAL D-STAR or P-25 as well as newer ANALOG voice repeaters can use 2.5 KHz or less "Narrow Band" deviation.

The FCC has set the date for "Narrow Banding" of Business and Public Safety systems by ruling in Section 90.209(5)(i) and (ii) that beginning January 1, 2011, no new applications or modifications that increase the station's authorized interference contour, (Range or ERP) for the 150-174 MHz and/or 421-512 MHz bands will be acceptable for filing if the applicant utilizes channels with an authorized bandwidth exceeding 11.25 KHz.

Essentially this means that no new or expanded Part 90 (Public Safety and Business) systems will be authorized on 12.5 or 25 KHz bandwidth allocations and all new systems must use Narrow Band. While this is creating a flow of surplus wide band equipment it is also creating a small flow of Narrow Band hardware and the manufacturers are primarily making narrow band compliant equipment today. The availability of Narrow Band equipment will improve substantially over the next few years.

Most of the newer Amateur Radio equipment available on the market today in the 144-147 MHz and 430-450 MHz range is capable of using 6.25 KHz (2.5 KHz deviation) channels. Since the use of these new technology systems usually requires the purchase of new radios which are compatible with the new technology systems, by allocating "Narrow Band" channels for these newer technology systems there should be a minimal impact on existing "Wide Band" Repeaters and users.

While 12.5 and 6.25 KHz channel spacing has been used on UHF Ham and Commercial bands for some time the VHF bands have used 15 KHz spacing for decades. Since the legacy spacing of VHF commercial and 146-147 MHz Ham bands do not permit the use of 12.5 or 6.25 KHz spacing without a complete and disruptive re-farming of the entire band the FRC proposes to follow the FCC's VHF plan (90.20 and 90.35 Tables) and allow use of 7.5 KHz spacing between the legacy 15 KHz channels and 10 KHz spacing between the existing 145 MHz Channels. Most newer Amateur radio equipment evaluated will program to the 7.5 or 10 KHz spacing without difficulty however the scanning or stepping functions may require software or firmware updates to properly "Scan" these new channels in VFO mode.

While Ham Radio is under no mandate to move to the Part 90 Narrow Band standards there is narrow band equipment available to hams today. It is logical that we take advantage of the expensive research that has been done on Narrow Banding of public safety and commercial radio and provide for both Wide and Narrow systems to co-exist in the ham bands.

The proposed changes will create 71 new frequency pairs for "Narrow Band" repeaters on 2 meters thus providing spectrum for experimentation and development of the newer technology systems that utilize "narrow Band" emission. Therefore we propose the following change to the 2-meter band plan and rules to be presented for adoption by the Florida Repeater Council.

The changes to be published on the FRC web site for review and comments and considered for adoption at the Spring 2011 FRC Annual meeting.

Proposed Rule Changes;

1. The FRC will only coordinate "Wide Band" repeaters on the existing frequencies that were previously allocated for wide band repeater use in the FRC 144-148 and 430-450 MHz Band Plan prior to 1-1-2011.

*This means no wide band systems on the NEW Narrow Band channels.*

2. No new "Wide Band" coordinations will be issued after 1-1-2015 unless the applicant provides suitable documentation to show sufficient need for such NEW "Wide Band" systems based on user demand or other advanced technology experimentation. The FRC Board shall determine the appropriate requirements for such showing of sufficient need.

3. The FRC will not routinely renew a wide band coordination which expires after 1-1-2020 However, a repeater operator may apply to the FRC Board for renewal of an existing "Wide Band" coordination after 1-1-2020 upon showing of sufficient need to continue to serve legacy "Wide Band" users or other advanced technology experimentation. The FRC Board shall determine the appropriate requirements for such showing of sufficient need.

4. The FRC may coordinate "Narrow Band" repeaters on any frequency allocated for repeaters in the FRC Band Plan in the 144-148 and 430-450 MHz bands. This will allow assignment of the frequencies located between the existing repeater pairs for "Narrow Band" systems such as D-STAR, P-25 or narrow FM repeaters.

5. FRC will only issue a new or modified coordination on the newly created pairs provided the proposed system meets the new part 90 requirements as "Narrow Band" or less than 2.5 KHz deviation. These systems will require a minimum 30 mile adjacent channel separation from a Narrow Band system and 50 Mile adjacent from a Wide Band system.

End of Proposed Rule Changes.

Notes,

This proposal does not eliminate a single repeater system that is currently coordinated but it does provide channels for newer systems that use Narrow Band standards. The FRC believes that the natural evolution of technology will move ham repeaters toward more Narrow Band systems as equipment becomes available in the future but if there is reasonable demand for legacy Wide Band systems FRC will continue to provide for those systems in the future.

We understand that there may be an impact on a few repeater operators who have very old systems which do not have reasonable selectivity or filtering on their receivers but we feel that most systems operating within generally accepted standards for repeaters will not experience any significant issues from the implementation of these changes.

The following chart shows the existing allocations and the frequencies that will be added under the band plan. Since the 145 MHz repeater allocations in Florida use 20 KHz spacing FRC will assign "Narrow Band" systems on 10 KHz spacing between the existing frequencies. The 146 and 147 MHz repeater allocations in Florida are spaced at 15 KHz. FRC will assign "Narrow Band" systems on 7.5 KHz between the existing frequencies. This proposal does NOT require any relocation of existing repeater frequencies but will create 71 additional pairs in the 2 meter repeater sub-band.

EXISTING	PROPOSED
145.1100	145.1100
	145.1200
145.1300	145.1300
	145.1400
145.1500	145.1500
	145.1600
145.1700	145.1700
	145.1800
145.1900	145.1900
	145.2000
145.2100	145.2100
	145.2200
145.2300	145.2300
	145.2400
145.2500	145.2500
	145.2600
145.2700	145.2700
	145.2800
145.2900	145.2900
	145.3000
145.3100	145.3100
	145.3200
145.3300	145.3300
	145.3400
145.3500	145.3500
	145.3600
145.3700	145.3700
	145.3800
145.3900	145.3900

	145.4000
145.4100	145.4100
	145.4200
145.4300	145.4300
	145.4400
145.4500	145.4500
	145.4600
145.4700	145.4700
	145.4800
145.4900	145.4900

146.6100	146.6100
	146.6175
146.6250	146.6250
	146.6325
146.6400	146.6400
	146.6475
146.6550	146.6550
	146.6625
146.6700	146.6700
	146.6775
146.6850	146.6850
	146.6925
146.7000	146.7000
	146.7075
146.7150	146.7150
	146.7225
146.7300	146.7300
	146.7375
146.7450	146.7450
	146.7525
146.7600	146.7600
	146.7675
146.7750	146.7750
	146.7825
146.7900	146.7900

	146.7975
146.8050	146.8050
	146.8125
146.8200	146.8200
	146.8275
146.8350	146.8350
	146.8425
146.8500	146.8500
	146.8575
146.8650	146.8650
	146.8725
146.8800	146.8800
	146.8875
146.8950	146.8950
	146.9025
146.9100	146.9100
	146.9175
146.9250	146.9250
	146.9325
146.9400	146.9400
	146.9475
146.9550	146.9550
	146.9625
146.9700	146.9700
	146.9775
146.9850	146.9850
	146.9925
147.0000	147.0000
	147.0075
147.0150	147.0150
	147.0225
147.0300	147.0300
	147.0375
147.0450	147.0450
	147.0525
147.0600	147.0600
	147.0675
147.0750	147.0750
	147.0825
147.0900	147.0900
	147.0975
147.1050	147.1050
	147.1125
147.1200	147.1200
	147.1275
147.1350	147.1350
	147.1425
147.1500	147.1500
	147.1575
147.1650	147.1650

	147.1725
147.1800	147.1800
	147.1875
147.1950	147.1950
	147.2025
147.2100	147.2100
	147.2175
147.2250	147.2250
	147.2325
147.2400	147.2400
	147.2475
147.2550	147.2550
	147.2625
147.2700	147.2700
	147.2775
147.2850	147.2850
	147.2925
147.3000	147.3000
	147.3075
147.3150	147.3150
	147.3225
147.3300	147.3300
	147.3375
147.3450	147.3450
	147.3525
147.3600	147.3600
	147.3675
147.3750	147.3750
	147.3825
147.3900	147.3900

73	144
Current 2 Meter	Total 7.5 & 10 KHz

Both of these solutions are based on the Public Safety and Business Radio Service procedures in Part 90 of the FCC Rules. VHF public safety frequencies were spaced 15 KHz like the 146 MHz section of 2 meters, so the coordinating bodies decided to allocate 6.25 KHz wide (2.5 KHz Deviation) standard channels as required by the rules they chose to space them evenly on 7.5 KHz centers between the 15 KHz existing frequency assignments. This provided a substantial increase in assignable frequencies while requiring very little movement of existing systems. We propose to follow the lead of IMSA and APCO in using the same scheme for 2 meters.

If you have questions or comments please email them to the FRC at [narrowbandcomments@florida-repeaters.org](mailto:narrowbandcomments@florida-repeaters.org)

M Fletcher  
Director D4