

# **TEXAS VHF-FM SOCIETY, INC.**

## **Standards for Frequency Coordination**

(as revised and approved in January 2005)

These are the official standards of the Texas VHF-FM Society, Inc. regarding frequency coordination. These standards must be followed if you wish your system to be or remain coordinated. Remember, it is your responsibility to maintain current records with the Zone Coordinator. The coordinators need this information to minimize possible interference caused to or by your system. Unreported changes that cause interference to neighboring coordinated systems could result in the termination of your coordination. Your compliance and cooperation protect your coordination.

Frequency coordination is a free service provided by the Texas VHF-FM Society, Inc. Coordination services are provided to society members and non-members equally, however we recommend membership in order to remain informed of pertinent information regarding changes to these standards.

Coordinations issued by the Texas VHF-FM Society, Inc. are effective for a period of one year, and are renewable (see section VI). Except as noted in Section I.5.b, coordinations are nontransferable, and issued only for systems that are operational. New applicants receive a Construction Permit valid for six months (see section V).

The Frequency Coordination Committee has partitioned the state into five zones, with each zone having one or more coordinators ([see Appendix map](#)). All routine correspondence concerning coordination should be directed to the appropriate Zone Coordinator. Coordination revocation orders are a function of the society's state wide Frequency Coordinator (committee chairman) and all revocation-related correspondence from trustees shall be directed to the Frequency Coordinator (information copies may be directed to the Zone Coordinator but are not required). Consult the [map](#) to determine which Zone Coordinator has jurisdiction over the county in which your system is to be located.

### **I. Conditions for Coordination**

1. The VHF-FM Society, Inc. coordinates frequencies for repeaters, point-to-point links, and remote control. Applications for special use will be considered if there is a need for a coordinated frequency.
2. When assigning frequencies, Zone Coordinators will follow current Texas band plans. Coordinations will not be issued for systems not complying with the Texas plans unless special circumstances exist which prevent the operation of the system within the Texas plan and justify a waiver approved and issued by the affected Zone Coordinator(s).

3. The frequencies available for repeater use are summarized in Appendix A. The link and control frequencies are summarized in Appendix B. Exact band plans may be obtained from Zone Coordinators.

4. The Texas VHF-FM Society, Inc. accepts applications for coordination in the following categories:

a. Individual: In an individual coordination, the trustee of the system is responsible for all correspondence regarding the coordination. ONLY the trustee may request modification of the coordination (see Section IV).

b. Club: In a club coordination, an authorized representative must be designated as trustee and is therefore responsible for all correspondence regarding the coordination. If a club call sign is to be used, the trustee of the club license must also be designated Trustee for the coordination. When applying for coordination, a copy of the club Constitution and/or By-Laws must be attached to the application form. Any requests for modification of the coordination must comply with Section IV.

5. Transfer of coordination.

a. An individual coordination (as specified in I.4.a) may not be transferred to another individual.

b. A person holding an individual coordination may surrender for transfer that coordination to a constituted club or organization that meets the requirements of section I.4.b. From that time on, the coordination becomes a club coordination and will be considered such. Once surrendered and transfer to a club coordination is in effect, all prior individual coordination rights and privileges are forfeited. In the event of a trustee's death, disability, disappearance, revocation or suspension of license by F.C.C., or voluntary surrender for cancellation, failure to renew an expired license, adjudication of the trustee as legally incompetent, or similar extenuating circumstance, the Zone Coordinator may upon receipt of satisfactory proof that a trustee is no longer able to fulfill the legal responsibilities, declare that trusteeship surrendered and effect an Individual to Club Coordination, or change a club's designated trustee.

## **II. Trustees**

1. The trustee is directly responsible for all aspects of the system's operation. The trustee of the system makes all applications for construction permits, new coordinations and renewal of coordinations, and is responsible for informing the Zone Coordinator of any change in system status.

2. The trustee must maintain a current address and phone number on file with the Zone Coordinator. If the trustee resides outside the coverage area of the system, the trustee shall additionally furnish and maintain on a yearly basis with the Zone Coordinator the current name, address and telephone number of a local control operator. Correspondence

returned to the zone coordinator marked "undeliverable," "addressee unknown," "unable to forward," or any variation thereof by the U.S. Postal Service, shall be grounds for initiation of revocation proceedings. The FCC listed address for the trustee will be the final address used for all official correspondence with the trustee when other addresses are found to be inaccurate.

3. The trustee must maintain his or her call sign on the system, except that in the case of a club call sign all requirements of Section 1.4.b.(same trustee) shall be met.

### **III. Technical Standards**

The following standards are applicable to systems in the FM voice analog sub-bands. Standards for other modes as defined in the band plans shall meet the standards below as applicable and current good engineering practice criteria for the mode and equipment. More detailed standards for these other modes may be added at a later time.

1. Effective radiated power must not exceed the power specified on the coordination document.

2. The peak transmitter deviation must not exceed plus and minus 5 kHz, including CTCSS for standard spacing channels. For split channel operation (10 KHz on 144-148 band and 12.5 KHz on 440-450 band), the peak transmitter deviation must not exceed plus and minus 3.0 KHz, including CTCSS. Adjacent standard spacing channels will be encouraged to not exceed plus and minus 3.0 KHz, including CTCSS.

3. Transmitter frequency control must meet the following specifications:

a. For stations between 29.5 and 29.7 MHz, the frequency error must not exceed "0.002%.

b. For stations between 51 and 450 MHz, the frequency error must not exceed "0.0005%.

c. For stations between 902 MHz and 1.3 GHz, the frequency error must not exceed "0.00025%.

d. For stations above 1.3 GHz, the frequency error must not exceed "0.03%.

4. Any spurious emissions from the transmitter must be at least 60 dB below the mean power of the fundamental frequency.

5. The Texas VHF-FM Society, Inc. observes the following geographic spacing criteria:

a. For co-channel systems, 70 miles minimum.

b. Systems 5 kHz apart in frequency, 70 miles minimum.

- c. Systems 10 kHz apart in frequency, 50 miles minimum.
- d. Systems 12.5 kHz apart in frequency, 40 miles minimum
- e. Systems 15 kHz apart in frequency, 35 miles minimum.
- f. Systems 20 or more kHz apart in frequency, no minimum.

These criteria apply to all bands, and may be modified for terrain and special circumstances.

6. In accordance with good engineering and good amateur practice, (FCC Rules Part 97, Paragraph 97.101a), all new repeater coordinations issued by the Texas VHF-FM Society, after August 7, 1999, will utilize and report to the Zone Coordinator, a means of access protection technology at the repeater input.

The repeater input access control circuitry shall require a method of access protection to the repeater (a radio frequency carrier alone, shall be an insufficient condition) for the purpose of keying up the repeater by a user. The method of access may include, but not be limited to CTCSS, CDCSS, tone burst or any other commonly accepted means of input control, other than a simple carrier squelch method. Suggested CTCSS tones for open repeaters in each zone are at [ctcss.doc](#) .

Repeaters coordinated prior to August 7, 1999, are not required to utilize a method of input frequency access protection.

Repeaters or systems not using any means of input control will be responsible for and/or accept all interference caused by the lack of repeater input access protection.

Controlled access protection may be switched off for special periods of time, such as a net or emergency, at the discretion of a control operator, then reinstated at the end of the activity.

Any changes in the coordination technical standards of a repeater coordinated prior to the passage of this standard not utilizing access protection will require the re-coordination of that repeater and it will be subject to the requirement of repeater input access protection utilization.

Input access protection method must be reported to the Zone Coordinator upon initial coordination and with each coordination renewal of the repeater. Publication of the control access method is at the discretion of the trustee.

The location coordinates supplied on all new applications and renewals must be provided in Degrees, Minutes, and Seconds, and must use the WGS84 or NAD83 datum format.

#### **IV. Changes to the System**

The trustee must obtain the written approval of the Zone Coordinator before any of the information on the coordination document is to be changed, or if any of the system parameters specified are to be exceeded.

In the case of a club coordination, any request for modification must be accompanied by written authorization from the club executives.

#### **V. Applying for Coordination**

When applying for coordination, the trustee of the proposed system must submit an application form to the Zone Coordinator. At this time the Zone Coordinator will assign a frequency to the applicant and issue a construction permit for the system. If a frequency is not available in the desired band, either a frequency will be suggested on a band where frequencies are available, or the application will be placed on a waiting list for a frequency in the desired band. Construction Permits expire in 6 months, and are not renewable. Coordination will be granted upon return of the signed coordination renewal form that accompanied the Construction Permit. Construction Permits for split channel systems will not be issued without concurrence of the adjacent standard channel trustees on both sides of the split channel.

The return of this form certifies that the system is on the air and is operating within the scope of the Construction Permit. If the system does not meet these conditions at the end of the permit period, the frequency automatically goes back into the unused pool. It is the trustee's responsibility to return the renewal form when the system is operational. Upon receipt and approval of the renewal application, a verification of coordination will be returned to the trustee. If the zone coordinator is not notified within 15 days after the expiration date, the frequency will be subject to reassignment.

If more time is needed to complete construction the applicant may apply for a second Construction Permit. In order to obtain a second permit for the same frequency, the applicant must supply a written explanation of circumstances that necessitate a second Construction Permit. The system must be operational and any non-conformity exceeding the system parameters stated in the original Construction Permit must be approved, in writing, by the Zone Coordinator. The application for a second permit must be received no later than 15 days after the expiration of the original Construction Permit, and no more than two consecutive permits will be issued to the same applicant.

#### **VI. Renewal of Coordination**

Coordinations will be renewed every year provided that the system is operating within the scope of these standards. All coordinations expire on November 1 of the calendar year. Renewals may be accomplished for the upcoming year any time after June 1st. Zone coordinators may use mail, live, or "On-Line" renewal mechanisms, but in all cases

will notify all outstanding renewals by US Mail. Renewal will be granted or denied as specified in section VII.

## **VII. Revocation of Coordination**

Revocation of coordination or denial of renewal are actions the Texas VHF-FM Society, Inc. will make every effort to avoid. No trustee will have a coordination revoked or renewal denied without proper proceedings by the Texas VHF-FM Society, Inc. to determine if this is the appropriate action. Notifications and other correspondence from the Texas VHF-FM Society, Inc. relative to these proceedings shall be sent to the trustee by Certified First Class Mail to trustee's last known address (see Section II.2) and no reply will be required sooner than 30 days after mailing of such correspondence, the actual reply deadline to be stipulated therein.

Revocation of coordination shall be for the five following reasons:

1. Any system which is inactive for longer than three months shall be subject to review by the Zone Coordinator for possible revocation and re-assignment of the frequency.
2. Failure of the trustee or system to observe all applicable standards and requirements set forth in this document shall be grounds for revocation of coordination.
3. Unapproved changes in system parameters which exceed those stated in the coordination document shall be grounds for revocation of coordination.
4. Failure to renew coordination shall be grounds for revocation of coordination.
5. The coordination of any system known to be operating in technical violation of F.C.C. Rules, Part 97 Subpart C, Technical Standards, within 90 days after a notification of violation is mailed to the trustee's address of record by the Zone Frequency Coordinator may be grounds for revocation.
6. The certification of false information on a coordination renewal form shall be grounds for revocation of coordination.
7. In the event of a trustee's death, disability, disappearance, revocation or suspension of license by the FCC or voluntary surrender for cancellation, failure to renew an expired license, adjudication of the trustee as legally incompetent, or similar extenuating circumstance shall be grounds for revocation of coordination or transfer to a club coordination as described in Section 1.5.b. above.

Systems which do not meet these conditions will be declared uncoordinated. The Zone Coordinator will use his discretion within these conditions in order to determine whether a coordination is to be revoked. Any trustee whose coordination is revoked will be notified by certified mail as stated above and given an explanation as to the reasons for the revocation. The trustee may then appeal the decision in accordance with the bylaws of

the Texas VHF-FM Society, Inc. Any appeal must be brought within 90 days of the decision in order to be considered.

### **VIII. Arbitration**

In the event that a dispute over a frequency coordination arises between the zone coordinator and a trustee, the zone coordinator and a club, two clubs and/or two trustees which cannot be resolved in a timely manner, the dispute can be brought to arbitration. Arbitration will be performed by a three-member panel of designated non-involved representatives of each party involved in the dispute and the Texas VHF-FM Society, Inc. The findings of this arbitration panel shall be binding on all parties involved in the dispute and cannot be appealed.

If the parties involved in the dispute agree to take the dispute to arbitration, each should select a representative who is not involved in the dispute in any manner. The Texas VHF-FM Society, Inc. will appoint a third member in a similar manner. All appointed representatives on the board shall be licensed radio amateurs.

The arbitration board will be allowed 90 days to make a finding. Information or facts pertaining to the dispute must be presented to the board in writing through the secretary of the Texas VHF-FM Society, Inc. The secretary will forward the board's findings in writing to all parties involved in the dispute.

### **APPENDIX A: REPEATER FREQUENCIES**

29.5-29.7 MHz:

Low in/high out, 100 kHz offset, 20 kHz channel spacing, even pairs.

51-54 MHz:

Low in/high out, 1 MHz offset, 20 kHz channel spacing, odd pairs.

144.5-145.5 MHz:

Low in/high out, 600 kHz offset, 20 kHz channel spacing, odd pairs (10 kHz splits at the discretion of the Zone Coordinator).

146-147 MHz:

Low in/high out, 600 kHz offset, 20 kHz channel spacing, even pairs (10 kHz splits at the discretion of the Zone Coordinator).

147-148 MHz:

High in/low out, 600 kHz offset, 20 kHz channel spacing, even pairs (10 kHz splits at the discretion of the Zone Coordinator).

222.18-225 MHz:

Low in/high out, 1.6 MHz offset, 20 kHz channel spacing, even pairs.

420-450 MHz:

High in/low out, 5 MHz offset, 25 kHz channel spacing (12.5 kHz splits at the discretion of the Zone Coordinator).

902-928 MHz:

Low in/high out, 12 MHz offset, 100 kHz channel spacing.

1240-1300 MHz:

Low in/high out, 20 MHz offset, 20 kHz channel spacing.

## **APPENDIX B: LINK AND CONTROL FREQUENCIES**

420-450 MHz: 12.5 kHz spacing in the following segments:

420.0-431.0 MHz

433.0-435.0 MHz

438.0-440.0 MHz

445.0-447.0 MHz

902-928 MHz: 100 kHz channels. Consult coordinator for exact frequencies.

1240-1300 MHz: 1273.02-1278.98 MHz in several sub-bands, 20 kHz spacing.

These frequencies are to be used as a guide only.

Consult the appropriate Zone Coordinator for exact band plans.

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Revised and approved by General Membership 8/91

Revised and approved by General Membership 8/99 (Distance spacings reduced and controlled access added)

Revised and approved by General Membership 1/03 (General cleanup and provisions for split channels added)

Revised and approved by General Membership 1/05 (Add requirement that location coordinates be in Degrees, Minutes, and Seconds and use WGS84 or NAD83 datum format.)

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