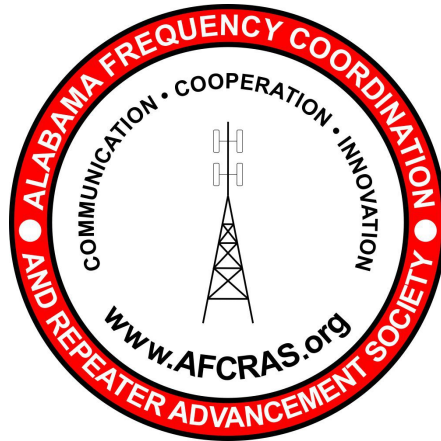


Alabama Frequency Coordination & Repeater Advancement Society



Frequency Coordination: **Policy and Guidelines** (FCPG)

*AFCRAS Document FCPG 20180212a
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INTRODUCTION

These Frequency Coordination Policies and Guidelines (FCPG) are intended to serve as a guide for AFCRAS Frequency Coordinators, as well as existing and prospective repeater owners and/or trustees. These guidelines include detailed information – as well as additional, related information – regarding the following:

- How to achieve and maintain coordinated status
- The duties of owners/trustees for operating and maintaining repeaters in the VHF, UHF, and microwave portions of the radio frequency spectrum established by the FCC for use by properly licensed Amateur Radio Operators
- The duties of AFCRAS Frequency Coordinators

With continual growth in the popularity of Amateur Radio, the allocated RF spectrum assigned for the hobby has become increasingly crowded. The cost of much of the equipment necessary for assembling a repeater system has decreased significantly over time, while the features and capabilities of the equipment have increased, making them ever more popular and within the reach of more “hams” than ever, further compounding the issue of frequency crowding.

In order to insure the ongoing enjoyment of the Amateur Radio hobby for all involved, it is extremely important that all station operators and repeater owners and trustees establish and employ some agreed upon guidelines, operating parameters, etc. While the FCC has codified and maintains the basic rules upon which we all agree to operate, they have also made a conscious effort to give the Amateur Radio community tremendous freedom and latitude to continuously experiment, develop and improve the technology, and use our skills and equipment in innovative, creative ways. But “with freedom comes responsibility.” Our responsibilities in the hobby include maximizing the efficiency of Amateur Radio RF spectrum use so that all licensees can enjoy the hobby with as little unwanted “interference” as possible between stations, repeaters, and other equipment – ideally, *no* unwanted interference, although factors beyond the control of any of us, such as rogue “band openings,” storms, solar activity, etc. do make their presence known sporadically. It is in the area of things we *can* control that we must continue to work together to prevent and eliminate as much controllable interference as possible.

The creation and use of band plans and frequency utilization plans affords increasing numbers of repeaters to operate effectively and enjoyably within any specified geographic area. The Amateur Radio Relay League (ARRL) and others have gone to great lengths to develop suggested “band” and “utilization” plans. While some of the information in those plans is based on FCC rules (i.e., codified as “law”), much of it falls within the realm of “suggested” operating practice. By mutually utilizing and adhering to those plans, Amateur Radio operators are much better able to operate and communicate harmoniously and enjoyably. The realm of repeater operation benefits equally from the utilization of agreed upon standards.

While the FCC clearly states that “coordination” of repeaters is not mandatory for their operation, they have also established rules stating the responsibilities of “uncoordinated” and

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“coordinated” repeater owners in dealing with and correcting interference issues. Repeater coordination indeed is not mandatory; however, the process of having a repeater coordinated maximizes the likelihood of the repeater – and other repeaters – all working optimally. Knowledgeable, dedicated frequency coordinators go to great lengths to provide repeater owners and trustees with suggested operating frequencies, power levels, and other information intended to help everyone get the greatest possible enjoyment from repeaters with the least possible headaches along the way. These suggestions are documented in the form of repeater “coordination” records. These records, in turn, provide a repository of information for coordinating other repeaters more effectively. AFCRAS appreciates and advocates the use of these coordination records as *openly available information*. With the information easily accessible, licensees wishing to access and communicate through the repeaters can use such lists to search for and identify nearby repeaters and have all the information they need regarding the repeater locations, frequencies, operating modes, tones or digitally coded squelch, and other information. For this reason as well as others, AFCRAS has adopted a policy of making the database of all AFCRAS coordinated repeaters openly and freely available, for the benefit of the repeater owners, trustees, and users, as well for the benefit of frequency coordinators in adjacent geographic areas. To that end, *AFCRAS encourages all frequency coordinators and entities to make their databases openly and freely available.*

It is the policy of AFCRAS never to sell or seek monetary benefit from the data regarding the repeaters we coordinate. We are here to provide the greatest service possible to the Alabama Amateur Radio Community. Our services are solely volunteer and not intended for profit in any way. But just because services are provided on a volunteer basis for people involved in what is, technically, a *hobby*, does not mean the services should not be provided in a professional, courteous, and timely manner, which AFCRAS has been created for the purpose of doing. As an organization and as individuals, we are very dedicated to helping make and keep Amateur Radio as enjoyable a hobby as possible for Alabama hams and our neighbors in adjacent states.

Through repeater owners and trustees voluntarily participating, promoting, and complying with the coordination process, Amateur Radio can continue to grow in popularity, capabilities, and excitement for Alabama licensees and licensees in neighboring states. AFCRAS is here to be of service to you.

Policy 1 – Service Provision Area

The Alabama Frequency Coordination and Repeater Advancement Society (AFCRAS) provides frequency coordination services for Amateur Radio licensees and Amateur Radio related organizations operating Qualified Automated Devices (QAD's)/repeaters in the state of Alabama. AFCRAS also provides information and technical services to individuals and organizations outside the state of Alabama who have a vested interest in coordination and operation of such systems, equipment, and devices while minimizing the likelihood and occurrence of harmful interference.

Policy 2 – Bands/RF Spectrum Covered by AFCRAS Services

AFCRAS has developed and maintains Frequency Utilization Plans (FUP's) for the following Amateur Radio operating bands, as defined by the FCC:

- 28.0 – 29.7 MHz band
- 50 – 54 MHz band
- 144 – 148 MHz band
- 420 – 450 MHz band
- 902-928 MHz band
- 1.24 GH-1.3 GHz band

Policy 3 – Frequency Utilization Plan Development and Adoption Methodology

The AFCRAS Frequency Utilization Plans have been developed and are maintained and implemented based on the following core objectives:

- Implementing the “band plans” developed and recommended by the ARRL to the greatest extent possible for purposes of “standardization” and better experiences for Amateur Radio operators and repeater operators and users
- Taking into account similar plans in use by frequency coordination entities in adjacent states, which facilitates easier coordination between coordinating entities
- The ability for Amateur Radio licensees operating in Alabama to have free and easy access to recommendations for use of Amateur Radio frequencies within these bands

Policy 4 – Frequency Coordinators

AFCRAS frequency coordination services are performed by a designated Frequency Coordinator and Assistant Frequency Coordinator, in accordance with the AFCRAS Bylaws.

Policy 5 – Development and Maintenance of FCPG's and FUP's

The AFCRAS Frequency Coordination and Standards Committee is responsible for maintenance and revision of the AFCRAS Coordination Policies and Guidelines, and the

AFCRAS Frequency Utilization Plans, in accordance with the AFCRAS Bylaws.

Policy 6 – Repeater Separation Parameters and Methodologies

Coordination of QAD's/repeaters by AFCRAS is based on two layers of methodology, one being minimal distance separation guidelines, and the second being the utilization of the same methodology prescribed by the FCC for critical services in the Land Mobile Radio (LMR) spectrum for coordination in the 6 Meter, 2 Meter, 1.25 Meter, and 70 cm bands.

Co-channel Review Distance Parameters

- For 28 MHz, 50 MHz, 2 Meter, and 1.25 Meter repeaters, coordination will be based on review of any known, coordinated repeaters operating on the same frequency or frequencies within a 125 mile (or 200 km) radius of the geographic coordinates listed on the received application for frequency coordination.
- For 70 cm, 902 MHz, and 1.24 GHz repeaters the review distance will be 100 miles (or 160 km).

Utilization of Service Contours and Interference Contours for 6 Meter, 2 Meter, and 70 cm QAD's/Repeaters

- The Service Contour and Interference Contour will be calculated and mapped for the QAD/repeater being applied for, and for any co-channel repeater within the above prescribed co-channel review distances
- Neither the Service Contour nor the Interference Contour of the applied-for repeater may overlap the Service Contour of any identified repeater within the above prescribed co-channel review distance, or vice versa.
- It is acceptable for the Interference Contour of the applied-for QAD/repeater to overlap the Interference Contour(s) of co-channel repeater(s) located within the above prescribed co-channel review distance, and vice versa.
- Geographic coordinates of identified co-channel repeater(s) within the prescribed review distance should be plotted to the maximum resolution readily available or provided by the entity providing coordination of said repeater(s)
- Due to the fact that some of the tools commonly utilized for calculating and plotting the Service and Interference Contours using the specific frequencies of QAD's/repeaters in the 2 Meter band, a frequency of 150 MHz may be used for calculating and plotting the Contours, as propagation characteristics between the 144-148 MHz frequencies and 150 MHz are essentially identical
- If an existing co-channel repeater is identified within the above prescribed co-channel review distance but the actual operating parameters are not readily available or provided to the AFCRAS Frequency Coordinator by the entity with which it is coordinated within a specified time frame upon request from the AFCRAS Frequency Coordinator, the following default parameters will be utilized for the calculation and plotting of the Service and Interference Contours

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for the existing repeater:

- Antenna Height Above Ground Level (AGL): 300' (or 91.44 meters)
- Transmitter Effective Radiated Power (ERP): 300 Watts
- Antenna pattern: omnidirectional

Information/Search Requests Submitted to Other Frequency Coordination Entities

AFCRAS will maintain an openly available, online database of AFCRAS coordinated repeaters which will include the necessary information on each repeater for other coordinating entities to avoid coordinating a new repeater or modifying the coordination of an existing coordinated repeater in such a way that would cause a potential interference problem. AFCRAS encourages other coordinating entities to access the AFCRAS online database as part of their coordination process. In likewise fashion, AFCRAS recommends that any other coordinating entities in Alabama or adjacent states make their coordination databases openly available to AFCRAS. This is in the best interest of the Amateur Radio communities we all serve.

If the AFCRAS Frequency Coordinator, the Assistant Frequency Coordinator, or a member of the Frequency Coordination and Technical Standards Committee submits a request by email to the Frequency Coordinator of another coordinating entity asking for information regarding co-channel or adjacent QAD's/repeaters which they have currently coordinated (or proposed) within a certain geographic distance of an applied-for location for purposes of review for potential interference between the existing coordinated repeater(s) and the proposed repeater, such lack of response (or timely response) will be deemed as a response of “no potential coordination conflicts or potential interference issues identified.” The time window for receipt of e-mail response from other coordinating entities shall be seven calendar days.

Adjacent Channel Distance Parameters

- *The following geographic spacing parameters are recommendations only. The Frequency Coordinator has the option to coordinate and recommend operation of a repeater at closer spacing at his/her discretion, based on terrain, antenna radiation patterns, etc.*
- 28 MHz, 6 Meter, and 1.25 Meter repeaters utilizing 16K0F3 (16 KHz bandwidth) or 20K0F3 (25 KHz bandwidth of any FCC approved type, such as “WFM (“FM-Wide”)) repeaters operating on frequencies separated by 20 KHz spacing should be separated by a minimum of 25 miles.
- For 2 Meter repeaters using the above emission types, the minimal separation distances should be:
 - 144-145 MHz – 25 miles at 20 KHz spacing

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- 144-145 MHz – 50 miles at 10 KHz spacing
- 144-148 MHz – 50 miles at 12.5 KHz spacing
- 146-148 MHz – 50 miles at 15 KHz spacing
- For 70 cm, 902 MHz, and 1.24 GHz repeaters with 25 KHz or greater spacing, no minimal distance spacing should be required
- For 902 MHz repeaters utilizing 11K0F3 emission type with 12.5 KHz spacing, the minimum separation should be 25 miles

Section 7 – QAD/Repeater Output Power Limitations

The maximum transmitter power at which a QAD/repeater will be coordinated by AFCRAS should be the lesser of the following:

- The output power level the applicant has requested on the FCM application form
- The maximum power level at which the QAD/repeater will meet the Service and Interference Contour overlap avoidance requirement set for above (for 6 Meter, 2 Meter, and 70 cm QAD's/repeaters)
- The following limitations, by band and HAAT:
 - 28 MHz through 225 MHz:
 - Less than 30 meters – 800 Watts ERP
 - 30 meters but less than 150 meters – 400 Watts ERP
 - 150 meters but less than 300 meters – 200 Watts ERP
 - 300 meters and above – 100 Watts ERP
 - For 70 cm and above bands:
 - Less than 300 meters – 800 Watts ERP
 - 300 meters and above – 400 Watts ERP

The Frequency Coordinator may at his/her discretion make an exception to the above output power limitations on a case-by-case basis, provided the applicant provides documentation requesting and describing the need for such a variance which the Frequency Coordinator feels justifies the exception.

Policy 8 – Repeater Call Sign, Trustee, Sponsor, and Holder of Record

An individual coordination has an individual amateur radio operator's station call sign as the repeater call sign, repeater trustee, and holder of the coordination record. A sponsoring individual or sponsoring organization is optional.

A club coordination that has an amateur radio club call sign as assigned to the repeater must have an individual who holds a current FCC Amateur Radio license appointed as the trustee of that Club Coordination. A sponsoring individual or sponsoring organization is optional. When filing a FCM application form with AFCRAS for new or modified coordination for a club, the club name is what should be entered in the "Applicant/Owner of Coordination" field, and the trustee's name and information should be entered in the field labeled "Trustee."

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The trustee information for a club coordination must match the name and callsign currently appearing in the FCC ULS record for the club callsign.

Repeaters coordinated with FCC assigned Military Recreation call signs shall have the individual indicated on that Military Recreation call sign as the repeater trustee.

All requests for new coordination or for changes in listing, call sign, or sponsorship, for a repeater or its associated link shall be submitted by the trustee.

In order to change the trustee for a club repeater, the club will need to submit a written letter by mail to AFCRAS indicating the name of the newly appointed trustee. This must be an original, signed letter – photocopies, e-mail, fax, etc. will not be accepted.

All requests for new frequency coordination or modification of a currently coordinated repeater must be submitted either electronically or by mail using the latest revision of AFCRAS form FCM, which can be found on the AFCRAS website.

Policy 9 – Changes In Antenna Height, Output Power, or Location

If any changes are made in the antenna height or pattern, effective radiated power, frequency, or other operating parameters of an AFCRAS coordinated repeater, an AFCRAS form FCM must be submitted with the “Modified Frequency Coordination” box checked. This re-coordination is required to verify that interference to or from other repeaters will not be expected to occur under normal operating condition. The purpose of such modification/re-coordination is *not* to for the purpose of allowing another proposed repeater to be assigned to the existing frequency coordination.

If any of the following changes are made to a QAD/repeater currently coordinated by AFCRAS, form FCM must be submitted as described above:

- ERP change of 1 dB or more
- Antenna height change of more than fifteen feet
- Relocation of repeater 1,500 feet or more
- Change of antenna from omnidirectional to directional, or directional to omnidirectional

Policy 10 – Transfer of Coordination To New Owner (Holder of Record)

In the event of a repeater being sold or otherwise changing ownership, AFCRAS will only assign coordination to the new owner if the following conditions are met:

- An original, signed letter and documentation clearly of the sale or change of ownership by other means must be submitted to AFCRAS by the original owner appearing in the AFCRAS Coordination Database
- An AFCRAS form FCM must be completed and submitted and the “New” Coordination

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box must be checked

- The New Coordination must be approved by the AFCRAS Frequency Coordinator

If the parameters of the New Coordination indicated on the submitted form FCM do not meet the requirements for coordination, the frequency coordination shall be terminated.

Policy 11 – Responsibilities of Repeater Trustees

The trustee of a coordinated QAD/repeater shall notify the AFCRAS Frequency Coordinator of a change in his/her email, physical, or telephone number. This may be submitted by e-mail or in writing. The trustee should also be sure to make the updates/changes in the FCC ULS database, in writing, within ten days of any change in their mailing address.

Trustees shall notify their Frequency Coordinator in writing or by email, within ten days of the date the QAD/repeater ceases operation. If a repeater permanently ceases operation or is sold for relocation, the trustee shall notify their Frequency Coordinator in writing, within ten days of the event. Such cessation letter will be construed to mean the trustee is relinquishing the assigned frequency or frequency pair. Failure to maintain current information in the AFCRAS database may also be construed as notification that the QAD/repeater has ceased operation and the frequencies are available for re-assignment.

If a QAD/repeater owner or trustee of record fails to keep all information in the AFCRAS database current for a period of two consecutive years, AFCRAS may automatically decoordinate the frequency or frequency pair.

Policy 12 – Coordination Specifics

AFCRAS recognizes two fundamental motivations for the establishment of an amateur repeater:

- As a service to other amateurs living or traveling in the service area, and
- As an exercise in individual achievement on the part of the owner(s) or trustee(s).

Both of these motivations are equally valid and in the traditional spirit of amateur radio. However, in cases where these two rationales are in conflict, service must prevail over individual achievement. For example, an operator wishing to set up a new repeater, largely for reasons of self-achievement, in an area already well served by existing repeaters, must be accommodated in a way that does not detract from the existing area serviced, in terms of co-channel or adjacent channel interference.

Most large cities already have enough two meter repeaters for both emergency and routine communication. Therefore, small towns and rural areas that are removed from those cities may take priority in the allocation of available frequency pairs. Those less populated areas may not be able to utilize other bands as easily as more populated areas because of the limited number of amateurs available to support the use of alternate bands.

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The owner and/or trustee of the proposed repeater shall actively participate with the AFCRAS Frequency Coordinator in the survey of available frequencies and the coverage area of existing systems. Further, the owner and/or trustee will bear the primary responsibility for any testing or monitoring period that might be required by the Frequency Coordinator. The Frequency Coordinator may also require the logging of signals heard, at the proposed coordination site, from co-channel and/or adjacent users. Although the final decision will be at the discretion of the Frequency Coordinator the burden of proof of an alleged clear frequency will rest with the proposed repeater owner and/or trustee.

QAD/repeater frequency assignments shall be made with more consideration given to the transmissions of fixed and mobile stations than the output signal of the repeater. The majority of repeater coordination problems arise from fixed and mobile stations inadvertently accessing co-channel and adjacent channel repeaters in addition to the one intended.

Existing coordinated repeaters have first right to continued use of their frequencies and reasonable service areas. The effective use of an existing repeater should not be appreciably affected by a new repeater.

These rights have great weight, but are not absolute. For example: An established wide area repeater should expect and tolerate minor loss of fringe coverage and the occasional inadvertent access, to allow a new repeater to provide needed service in a location distant from the first. Also, being "first on frequency" carries no special right to make a technical parameter change without re-coordination of the frequency assignment, as stated in Policy 9.

Applications for new coordination or modifications to existing coordination will not necessarily be granted based on chronological order of application submission and receipt. For example, if an FCM application form is submitted on May 1st requesting an increase in ERP which would expand the Service Contour of an existing QAD/repeater, and on May 5th an FCM application for a new coordination is received using the same frequency pair in another area which and would not be expected to interfere with the existing coordination of the applicant request a modification, it will be up to the AFCRAS Frequency Coordinator to make the decision regarding which application takes precedence. The Frequency Coordinator may – at his/her discretion – request further details, documentation, etc. from either or both applicants expressing the benefits to the Alabama Amateur radio community of approving their respective application. The Frequency Coordinator may even suggest some sort of compromise between the two applicants which he/she feels would be a “win/win” and of benefit to both applicants and the Amateur Radio community as a whole.

Applications for closed repeaters (the “Open” box not checked on the FCM form) will be *discouraged*. The rationale for this position is simple:

- Frequency pairs are a limited resource and they should be coordinated and utilized as effectively and efficiently as possible for the enjoyment and benefit as many Amateur Radio licensees as possible. If a QAD/repeater owner encounters interference (either intentional or unintentional), or use of the repeater by one or more operators which

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he/she feels is malicious or illegal, there are methods of dealing with such, some of which are covered elsewhere in the FCPG. Organizations or clubs operating QAD's/repeaters which they feel are so critical in their application that access and use should be limited to only certain users might actually benefit more from applying for a license in the Land Mobile Radio (LMR) or other services.

Repeater linking via remotely controlled transmitters and/or receivers using non-coordinated frequencies/frequency pairs has the potential to cause harmful interference to coordinated QAD/repeater operations and is therefore highly discouraged. 7

Repeater owners/Trustees are encouraged to utilize tone encode and decode to help prevent interference from stations that might be in a location where they can access more than one at a time, whether intentionally or unintentionally. In some cases, CTCSS may be required by the coordinator for the repeater to be coordinated.

Policy 13 - Coordination Policy for Digital Repeaters

Due to the wide variety of formats, modes and bandwidths for digital repeaters, coordination of digital and mixed mode (digital and analog operating on same frequency pair) presents unique challenges for repeater coordination.

In all cases, standard co-channel and adjacent channel parameters apply.

New Digital Repeater Coordination Requests

D-STAR, and NXDN repeaters may be coordinated in the 2m band on one of the 8 pairs designated for narrowband digital repeaters (144.920 – 145.08 outputs)

NXDN and D-Star may also be coordinated on one of the 10 KHz splinter pairs in the 144-145 sub-band (i.e. 145.120, 145.140, etc.).

In the 70cm band, NXDN, D-STAR and DMR may be coordinated on one of the 18 pairs between 440.5125 and 440.7250 or one of the 12.5 KHz splinter pairs between the standard 25 KHz pairs. If none of these pairs are available, one of the standard repeater pairs in the 2m or 70cm band may be used, but should only be used as a final choice to avoid mixing digital and analog repeaters.

For DMR/MotoTRBO, P25/APCO25 systems operating in digital only or mixed mode using narrowband FM, coordination should first be attempted in the 70 cm band using one of the 12.5 KHz splinter pairs. If this cannot be accommodated on a 70cm pair, one of the standard 2m or 70cm repeater pairs may be used as a final choice.

NXDN, System Fusion, P25 and DMR repeaters operating in mixed mode with

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wideband FM may be coordinated on standard repeater pairs in either 2 meter or 70cm bands.

Requests for Changing from Existing FM to Digital Repeater Coordination

If a currently coordinated FM repeater owner operating on a standard repeater pair wishes to **change to a digital repeater operating in digital only mode**, a change to one of the digital only pairs above should be suggested according to the digital mode to be used. If no pair is available for the specific digital only mode, it should remain on the standard repeater pair.

If a currently coordinated FM repeater owner operating on a standard repeater pair wishes to **change to a digital repeater operating in mixed digital and analog mode**, the repeater should remain on the standard pair in the 2m or 70cm band.

Policy 14 – Good Repeater Operating Practices

Good operating practices on the part of repeater owners and/or trustees and users is essential in order to achieve the standards that are expected in the amateur radio service and provide the greatest enjoyment of the hobby by the greatest number of participants. While frequency coordination entities are not granted enforcement power for regulating Amateur Radio frequencies, mutual cooperation between the coordination council, owners and/or trustees, and users is required to make frequency coordination work. Our coordination policy is an outline, which, if followed on a voluntary basis by all, will allow the coordination plan to work, thereby providing a better operating climate for all within amateur radio.

Further, AFCRAS advocates:

- Repeater owners and/or trustees and users should maintain good engineering and operating practices, as well as common amateur courtesy. Good amateur practice promotes harmony and prevents unwanted interference to, and from, other systems.
- Repeater users should use only the necessary amount of power necessary to access and communicate through repeaters. This eliminates or greatly reduces unwanted activation of other repeaters on the same frequency, nearby adjacent channel repeaters.
- Repeater users should see that their equipment operates on the proper frequency and their deviation should not exceed 5 KHz peaks. Digital operation may require a lower deviation setting to prevent over-deviation into a digital system.
- When a repeater's effective radiated power exceeds its receive capability, operators

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tend to use excessive transceiver power in order to access a repeater. This creates an atmosphere of potential interference to other co-channel and adjacent channel repeaters. For this reason, it is strongly suggested that repeater ERP should always be at a level which is appropriate for the repeater's receiving capabilities.

- Repeater owners and/or trustees are encouraged to use state of the art equipment with sufficient filtering on input and output and maintain proper calibrations in order to prevent adjacent channel interference.

Policy 15 – Applications for Coordination

Although voluntary since the early days of repeater operation, frequency coordination has played a large part in maintaining order in the operation of repeaters. AFCRAS strongly recommends to all amateurs that wish to construct and operate a repeater that they seek coordination and work in close cooperation with their coordination entity.

Any verbal or email discussion concerning coordination with the Frequency Coordinator is welcomed; however no official action will be taken until a completed FCM application form is submitted to AFCRAS.

Any licensed amateur who wishes to construct and operate a repeater shall contact the AFCRAS Frequency Coordinator and submit the proper information to AFCRAS either online or by mail. When an online AFCRAS FCM application is submitted, the Frequency Coordinator will receive automatic notification that a frequency pair or repeater coordination change is being requested and requires attention. The applicant shall provide all requested information.

Any licensed Amateur wishing to incorporate communications and/or control links for a QAD/repeater should submit separate FCM application forms for each link. Proper coordination of these links will help minimize the risks of interference between systems, and the risks of system malfunctions or loss of system control which could result from co-channel and/or adjacent channel interference.

New AFCRAS frequency coordinations are issued to the trustee named in AFCRAS database and are valid for six months from the date of issue. The repeater should be operational within this time period. If unavoidable circumstances prevent the new repeater from being placed on the air, a onetime six month construction extension may be issued by the Frequency Coordinator. Requests are to be made by email to the Frequency Coordinator. The extension request shall state the problems and/or reasons that prevented the repeater from being operational.

The trustee of a new repeater shall notify the Frequency Coordinator by using email or U.S. Postal Mail when his repeater is on the air in a permanent condition and operating within the specifications of the approved coordination request.

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Although the FCC no longer requires submission of repeater system diagrams, submission of such is often useful in expediting the review and approval of an application for coordination. Keeping thorough and organized records of maintenance and other pertinent data, and logging of repeater operation, inspections, and preventative maintenance is a good operating practice, which AFCRAS highly recommends. It is also recommended that each repeater trustee maintain a copy of the current AFCRAS FCPG and applicable FUP's, and stay abreast of any FCPG and FUP updates or revisions.

Policy 16 – Repeater De-Coordination

To preserve the integrity of the coordination process and to maintain accurate records, AFCRAS provides certain rules that shall be followed by all QAD/repeater owners/trustees as a condition of their frequency coordination. If these requirements are not followed, de-coordination of the assigned QAD/repeater frequencies shall occur.

The AFCRAS Frequency Coordinator is responsible for carrying out the policies of AFCRAS listed below: Repeater de-coordination shall occur:

- If the FCC orders the system to permanently cease operation, or
- If the amateur radio license of the owner, trustee, or the club (whomever is the “holder of record”) is suspended, revoked, or expires, or
- If the licensee fails to maintain a current address on file with AFCRAS and the FCC, or
- If the existence of a working system cannot be confirmed; or, if the holder cannot comply with the request of the Frequency Coordinator to demonstrate the operation of such system within thirty (30) days of a request to do so; or, if a working system is not on the air within the six month “New Coordination” period and the owner/trustee has not filed an email or written request requesting a construction extension.
- If the trustee of the system consistently violates good engineering or amateur radio practices by:
 - operating his/her system with excessive deviation, spurious emissions, or off frequency as to cause harmful interference to adjacent channel users, or
 - having been found to be responsible for interference to another system, and refusing to cooperate with other owners/trustees involved and/or the AFCRAS Frequency Coordinator, or
 - operating remotely controlled transmitters and/or receivers for the purpose of repeater linking, which utilize any allocated AFCRAS repeater input and/or output frequency, which cause harmful interference to coordinated repeater operations, or
- If the repeater owner/trustee significantly changes the previously coordinated operating parameters of a repeater such as location, power or antenna height above ground as specified in Policy 9 without prior re-coordination or approval by the AFCRAS Frequency Coordinator, or
- If the repeater owner/trustee changes any information on the annual AFCRAS update thereby altering the original coordination agreement, such as antenna height above ground, latitude & longitude, power output, or any other change specified in AFCRAS

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policies without prior submission and approval by the AFCRAS Frequency Coordinator, the repeater shall be transferred to an uncoordinated status, or

- Should AFCRAS de-coordinate a repeater pair, per the guidelines above, the repeater owner/trustee may re-apply for coordination with AFCRAS. Re-coordination, however, is not automatic and may not be granted, if in the meantime, another request for the frequency is in process or if the condition(s) that led to de-coordination have not been corrected.

Special Owner/Trustee Silent Key (“SK”) Coordination/Transfer Provision

In the event of the death of individual coordinated QAD/repeater owner or the trustee of a coordinated club QAD/repeater, the AFCRAS Frequency Coordinator will – upon notification of owner/trustee death – place the repeater in “SK” status. It may remain in “SK” status for a period of up to six months from the date of owner/trustee death. The repeater will not be considered a currently coordinated repeater for operational purposes.

For a club coordination, proper documentation of the assignment of a new trustee must be submitted within the six month “SK” window in order for the repeater to be placed back into actively coordinated status. The club will need to update their FCC ULS record and the newly appointed trustee information must match the trustee information appearing in the updated FCC ULS record. Failure of the club to properly appoint a new trustee, update the FCC ULS record, and notify AFCRAS of the trustee change will result in de-coordination of the QAD/repeater.

For individual coordination in “SK” status, an immediate family member (or duly authorized, representative of the estate of the deceased owner) may contact the AFCRAS Frequency Coordinator and request a special “SK Coordination Transfer” to a club or new individual owner, provided proper documentation is received showing that the club or new owner individual intends to operate the QAD/repeater in accordance with the coordination on file with AFCRAS. Any change in location or operating parameters (other than the owner information and callsign) will be treated as if it were a routine sale/transfer of equipment ownership) as outlined elsewhere in the FCPG, the repeater will be de-coordinated, and a new FCM application will need to be submitted to AFCRAS.

AFCRAS will neither reassign the coordinated frequency or frequencies for a QAD/repeater while it remains in “SK” status nor approve a new coordination which would not otherwise be approved under AFCRAS FCPG guidelines if the QAD/repeater were in actively coordinated status.

De-Coordination Action

The AFCRAS Frequency Coordinator may proceed with the following action:

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- The Frequency Coordinator, upon request, or for other reasons, may gather, document, and file research that indicates the frequency pair has not been in use for an extended period of time or that a policy of AFCRAS has been violated.
- The Frequency Coordinator will attempt to contact the repeater owner/trustee by e-mail. Should these attempts be unsuccessful, the Coordinator will attempt contact by USPS First Class Mail to the trustee of record using the FCC database address and the last address supplied to AFCRAS, if it should differ from the FCC record.
- If no response is successful within thirty (30) days using all methods listed in the point above, or if any repeater owner/trustee refuses to cooperate by refusing to discuss the matter with the Frequency Coordinator, or if the repeater owner/trustee fails to respond, AFCRAS may de-coordinate the frequency pair.
- Should the repeater owner or trustee respond to the action as stated above in a cooperative manner, the owner or trustee may request that the coordination be maintained. Coordination will be maintained for a reasonable and time the repeater owner/trustee must meet the requirements of a working system as listed in the AFCRAS policies within a reasonable timeframe.
- The owner or trustee must notify the AFCRAS Frequency Coordinator stating that the repeater is on the air and working properly, or that other policy violations have been corrected. Failure to comply with the above action may result in the de-coordination of the frequency pair.

90-Day De-Coordination Hold Period and Right of Owner/Trustee Appeal

When a QAD/repeater is de-coordinated (for reasons other than specific request by the holder of record or trustee, or special “SK” provisions covered elsewhere in the AFCRAS FCPG), the coordination shall be held in “De-Coordinated” (DC) status for a period of 90 days. During this 90-day “DC” hold, the owner (or trustee for a club repeater) may file a written appeal to the AFCRAS Frequency Coordination and Technical Standards Committee, thoroughly documenting full compliance with the AFCRAS FCPG and the parameters of the coordination which was de-coordinated.

If any of the operating parameters of the QAD/repeater have been changed such that they do not adhere to the coordination in question, an FCM form with the “Modified” box checked will need to be submitted as part of the appeal documentation. The Frequency Coordination and Technical Standards Committee will consider the appeal and may – by majority vote of the Committee – reverse the de-coordination and return the coordination to Currently Active “CA” status. Any modifications to the QAD/repeater which would result in an increase in the Service Contour and/or the Interference Contour of the coordination in question will result in automatic dismissal of the appeal.

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If the appeal results in the Committee reversing the de-coordination but modifications to the coordination were applied for and approved, the owner or trustee must submit written verification to the AFCRAS Frequency Coordinator within 30 calendar days that the QAD/repeater is fully operational in accordance with the coordination as modified and approved. If the owner/trustee is unable to return the repeater to fully operational status in accordance with the modified coordination during this 30-day time frame, a 30-day extension for technical reasons may be requested in written form addressed to the attention of the AFCRAS Frequency Coordinator and will be subject to approval of the Committee. Only one 30-day extension may be applied for and approved. Failure to notify and document compliance and fully operational status within 30 days of a de-coordination reversal (or a granted 30-day extension thereof) will result in immediate de-coordination, further appeals will be considered, and the de-coordinated frequency or frequencies will be returned to the pool of available frequencies and made available to other applicants.

Policy 17 – Interference Policies

AFCRAS maintains a policy of dealing with interference problems between repeater owners, trustees, and sponsors to resolve these disputes. This policy complies with FCC rulings and guidelines.

- If an uncoordinated repeater causes harmful interference to a coordinated repeater, the primary responsibility for correcting the interference rests with the owner/trustee of the uncoordinated repeater in accordance with FCC Part 97.205(c).
- If both repeater systems are coordinated, the trustee of both repeaters equally bear the responsibility for correcting the interference in accordance with FCC Part 97.205(c).
- If both repeater systems are uncoordinated, AFCRAS will provide coordination instructions if requested.
- In cases where an AFCRAS coordinated repeater is involved with interference with a system operated outside the AFCRAS service area (the state of Alabama), the AFCRAS Frequency Coordinator will work with the frequency coordinator from the other state and should work within the AFCRAS policies and guidelines while working to resolve the dispute with the other repeater and Frequency Coordinator.
- If a repeater trustee changes the location, antenna height or pattern, ERP, frequency, or other operating parameters of his system, as defined in Policy 9, and subsequently causes interference to other co- channel or adjacent channel repeaters, that repeater trustee bears primary responsibility for correcting the interference.

Policy 18 – Interference Review Procedures

AFCRAS policies are intended provide equal fairness to all parties that are involved in review and arbitration procedures that are a result of repeater interference complaints.

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- A repeater trustee who is a victim of harmful interference from another repeater system, or its operators, shall document times, band conditions, station call signs, and the type of interference experienced. Abnormal band conditions will not be considered as a valid reason for filing an interference complaint. The trustee of the repeater who is receiving interference shall contact the trustee of the interfering repeater by certified mail, return receipt requested, outlining the existing problem and include thorough documentation. The responding trustee shall answer any letter received within thirty calendar days.
- If negotiation attempts fail and the interference problem cannot be resolved with the trustee of the interfering repeater, the offended trustee shall then contact the AFCRAS Frequency Coordinator by letter, outlining the problem and provide thorough documentation of the problem. Any failed attempt to contact the interfering repeater trustee should also be explained in detail.
- The AFCRAS Frequency Coordinator may use the complete documented history of the affected repeater and any offending repeater that is contained in the applicable coordination file and database. If the AFCRAS Frequency Coordinator needs any other information, the individual trustees, sponsors, and repeater owner should respond within thirty days of any such request.
- If the AFCRAS Frequency Coordinator cannot resolve the problem, using the guidelines explained above, and the trustee bearing responsibility for the interference does not cooperate, or does not take reasonable action to resolve the problem, or refuses to cooperate with the AFCRAS Frequency Coordinator, the Frequency Coordinator may consult the FCC Enforcement Division, outlining the existing problem. He will also notify the affected repeater trustee and offending repeater trustee by email of the letter being sent to the FCC. The AFCRAS Frequency Coordinator will provide any information he has to the FCC if requested.
- Cases of malicious interference may be forwarded to the FCC Enforcement Division having jurisdiction in the area where interference is located after proper documentation has been made. Documentation shall include, but not be limited to, times, band conditions, station call signs, and the type of interference experienced.

Policy 19 – Repeater Indexes and Published Listings/Databases

In addition to coordinating QAD's/repeaters in the state of Alabama, AFCRAS shall maintain a database of information that will be readily available to all officers of the organization.

- AFCRAS shall maintain a computerized database of all AFCRAS coordinated QAD's/ repeaters. The repeater listings will be updated on an ongoing bases and are believed to be correct to the best of our knowledge. The published listings will contain only basic pertinent repeater information. All other repeater information, will be held as confidential and will not be published or made available to anyone, other than frequency coordinators through the regular course of their duties. Newly coordinated frequencies may not instantly appear in the database but every will be made to add the information to the AFCRAS online database in a timely manner.

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- AFCRAS reserves the right to publish the status of any AFCRAS coordinated QAD/repeater. The operational parameters of all AFCRAS coordinated QAD's/repeaters in the state of Alabama will be contained in our database.
- While AFCRAS makes every attempt to publish correct and accurate indexes, we cannot be responsible for errors in our lists including, but not limited to, those repeaters which may, or may not be, on the air. In cases where newly coordinated QAD's/repeaters under construction, are listed for one year and no communication has been received AFCRAS Frequency Coordinator concerning the status of the repeater, the listing may be deleted and de-coordinated.
- Repeater owners and/or trustees are responsible for the accurate listing of their repeater. Likewise, the owner/trustee is responsible to see that all pertinent operational information is on file with AFCRAS and kept up to date.
- Failure of a QAD/repeater owner/trustee to keep information updated with AFCRAS may be construed to infer that the repeater is no longer on the air and the frequency is available for re-assignment.