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interfering contour exceeds 93.3 kilometers (58 miles).

(3) For each protected transmitter identified, show the results of distance calculations indicating that there would be no overlap of service and interfering contours, or alternatively, indicate that the licensee of or applicant for the protected transmitter and/or the applicant, as required, have agreed in writing to accept any interference resulting from operation of the proposed transmitter.

(b) *Encompassment exhibit.* An exhibit showing that the area within the interfering contour of the proposed transmitter would be totally encompassed by interfering contours of operating co-channel base transmitters controlled by the applicant is required for applications to operate a transmitter with ERP exceeding the basic power and height-power limits of § 22.565. This encompassment exhibit may substitute for the interference exhibit required in paragraph (a) of this section.

[59 FR 59507, Nov. 17, 1994, as amended at 62 FR 11636, Mar. 12, 1997]

POINT-TO-POINT OPERATION

§ 22.591 Channels for point-to-point operation.

The following channels are allocated for assignment to fixed transmitters that support other transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz.

VHF Channels

72.02	72.36	72.80	75.66
72.04	72.38	72.82	75.68
72.06	72.40	72.84	75.70
72.08	72.42	72.86	75.72
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92
72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98
72.10	72.46	72.88	75.74
72.12	72.50	72.90	75.76
72.14	72.54	72.92	75.78
72.16	72.58	72.94	75.80
72.18	72.62	72.96	75.82
72.20	72.64	72.98	75.84
72.22	72.66	75.42	75.86
72.24	72.68	75.46	75.88
72.26	72.70	75.50	75.90
72.28	72.72	75.54	75.92
72.30	72.74	75.58	75.94
72.32	72.76	75.62	75.96
72.34	72.78	75.64	75.98

UHF Channels—State of Hawaii

488.250	491.250	489.750	492.750
488.750	491.750	490.250	493.250
489.250	492.250	490.750	493.750

(a) The 72–76 MHz channels may be assigned under developmental authority pursuant to the requirements of § 22.413. The 72–76 MHz channels may also be used in point-to-multipoint configurations. The 72–76 MHz channels are also allocated for assignment in the Private Radio Services (see part 90 of this chapter).

(b) [Reserved]

(c) Channels in the frequency ranges 488.250–490.750 and 491.250–493.750 MHz may be assigned only to inter-island fixed stations located in the State of Hawaii.

[59 FR 59507, Nov. 17, 1994; 60 FR 9889, Feb. 22, 1995, as amended at 70 FR 19309, Apr. 13, 2005]

§ 22.593 Effective radiated power limits.

The effective radiated power of fixed stations operating on the channels listed in § 22.591 must not exceed 150 Watts. The equivalent isotropically radiated power of existing fixed microwave stations (2110–2130 and 2160–2180 MHz) licensed under this part (pursuant to former rules) must not exceed the applicable limits set forth in § 101.113 of this chapter.

[70 FR 19309, Apr. 13, 2005]

§ 22.599 Assignment of 72–76 MHz channels.

Because of the potential for interference to the reception of TV Channels 4 and 5 by broadcast television sets and video recorders, assignments of the 72–76 MHz channels are subject to the following conditions:

(a) Assignments of 72–76 MHz channels for use within 129 kilometers (80 miles) of a full service TV station transmitting on TV Channel 4 or 5 are

subject to the condition that the licensee must eliminate any interference caused to television reception on TV Channels 4 and 5. If the FCC notifies the licensee of an interference problem and the licensee does not resolve the problem within 90 days of such notification, operation of the interfering 72–76 MHz fixed station must be immediately discontinued.

(b) 72–76 MHz channels may be assigned for use within 16 kilometers (10 miles) of a full service TV station transmitting on TV Channel 4 or 5 under a developmental authorization, pursuant to §22.413. However, for use within 50 meters (164 feet) of a TV station transmitting on TV Channel 4 or 5, 72–76 MHZ channels may be assigned under a regular authorization, rather than a developmental authorization.

§22.601 Existing microwave stations licensed under this part.

Existing microwave stations (2110–2130 and 2160–2180 MHz) licensed under this part (pursuant to former rules) are subject to the transition rules in §22.602. No new microwave systems will be authorized under this part.

(a) *Coordination required.* Before filing applications for authority to modify existing stations on these channels or major amendments to such applications, carriers must coordinate the planned channel usage, using the procedure outlined in §22.150, with affected parties in this radio service and the Point-to-Point Microwave Service and the Multipoint Distribution Service. Affected parties are licensees and other applicants with previously filed pending applications whose stations could affect or be affected by the proposed modification of the existing station in terms of interference.

(b) *System parameters.* In designing a system modification, the applicant must select sites, equipment and channels that will avoid harmful interference to other users. All parties must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, a party receiving notification is not obligated to suggest changes or re-design a proposal in cases involving conflicts. The applicant must identify in the application all parties with which the technical proposal was coordinated. In the event that technical problems are not resolved or if an affected party does not respond to coordination efforts within 30 days after notification, an explanation must be contained in the application. Where technical conflicts are resolved by an agreement between the parties that requires special procedures to reduce the likelihood of harmful interference (such as the use of artificial site shielding), or would result in a reduction of quality or capacity of either system, the details thereof must be contained in the application.

(c) *Bandwidth.* Applicants must request the minimum emission bandwidth necessary. The FCC does not authorize bandwidths larger than 800 kHz under this part.

[59 FR 59507, Nov. 17, 1994, as amended at 70 FR 19309, Apr. 13, 2005]

§22.602 Transition of the 2110–2130 and 2160–2180 MHz channels to emerging technologies.

The 2110–2130 and 2160–2180 MHz microwave channels formerly listed in §22.591 have been re-allocated for use by emerging technologies (ET) services. No new systems will be authorized under this part. The rules in this section provide for a transition period during which existing Paging and Radiotelephone Service (PARS) licensees using these channels may relocate operations to other media or to other fixed channels, including those in other microwave bands. For PARS licensees relocating operations to other microwave bands, authorization must be obtained under part 101 of this chapter.

(a) Licensees proposing to implement ET services may negotiate with PARS licensees authorized to use these channels, for the purpose of agreeing to terms under which the PARS licensees would—

(1) Relocate their operations to other fixed microwave bands or other media, or alternatively,

(2) Accept a sharing arrangement with the ET licensee that may result in an otherwise impermissible level of interference to the PARS operations.

(b) [Reserved]

(c) Relocation of fixed microwave licensees in the 2110–2130 MHz and 2160–2180 MHz bands will be subject to mandatory negotiations only. A separate mandatory negotiation period will commence for each fixed microwave licensee when an ET licensee informs that fixed microwave licensee in writing of its desire to negotiate. Mandatory negotiation periods are defined as follows:

(1) Non-public safety incumbents will have a two-year mandatory negotiation period; and

(2) Public safety incumbents will have a three-year mandatory negotiation period.

(d) The mandatory negotiation period is triggered at the option of the ET licensee. Once mandatory negotiations have begun, a PARS licensee may not refuse to negotiate and all parties are required to negotiate in good faith. Good faith requires each party to provide information to the other that is reasonably necessary to facilitate the relocation process. In evaluating claims that a party has not negotiated in good faith, the FCC will consider, *inter alia,* the following factors:

(1) Whether the ET licensee has made a *bona fide* offer to relocate the PARS licensee to comparable facilities in accordance with Section 101.75(b) of this chapter;

(2) If the PARS licensee has demanded a premium, the type of premium requested (*e.g.*, whether the premium is directly related to relocation, such as system-wide relocations and analog-to-digital conversions, versus other types of premiums), and whether the value of the premium as compared to the cost of providing comparable facilities is disproportionate (*i.e.*, whether there is a lack of proportion or relation between the two);

(3) What steps the parties have taken to determine the actual cost of relocation to comparable facilities;

(4) Whether either party has withheld information requested by the other party that is necessary to estimate relocation costs or to facilitate the relocation process. Any party alleging a violation of our good faith requirement must attach an independent estimate of the relocation costs in question to any documentation filed with the Commission in support of its claim. An independent cost estimate must include a specification for the comparable facility and a statement of the costs associated with providing that facility to the incumbent licensee.

(e) *Involuntary period.* After the end of the mandatory negotiation period, ET licensees may initiate involuntary relocation procedures under the Commission's rules. ET licensees are obligated to pay to relocate only the specific microwave links to which their systems pose an interference problem. Under involuntary relocation, a PARS licensee is required to relocate, provided that:

(1) The ET applicant, provider, licensee or representative guarantees payment of relocation costs, including all engineering, equipment, site and FCC fees, as well as any legitimate and prudent transaction expenses incurred by the PARS licensee that are directly attributable to an involuntary relocation, subject to a cap of two percent of the hard costs involved. Hard costs are defined as the actual costs associated with providing a replacement system, such as equipment and engineering expenses. ET licensees are not required to pay PARS licensees for internal resources devoted to the relocation process. ET licensees are not required to pay for transaction costs incurred by PARS licensees during the voluntary or mandatory periods once the involuntary period is initiated or for fees that cannot be legitimately tied to the provision of comparable facilities;

(2) The ET applicant, provider, licensee or representative completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are involved, identifying and obtaining, on the incumbents behalf, new channels and frequency coordination; and,

(3) The ET applicant, provider, licensee or representative builds the replacement system and tests it for comparability with the existing 2 GHz system.

(f) *Comparable Facilities.* The replacement system provided to an incumbent during an involuntary relocation must be at least equivalent to the existing

PARS system with respect to the following three factors:

(1) *Throughput.* Communications throughput is the amount of information transferred within a system in a given amount of time. If analog facilities are being replaced with analog, the ET licensee is required to provide the PARS licensee with an equivalent number of 4 kHz voice channels. If digital facilities are being replaced with digital, the ET licensee must provide the PARS licensee with equivalent data loading bits per second (bps). ET licensees must provide PARS licensees with enough throughput to satisfy the PARS licensee's system use at the time of relocation, not match the total capacity of the PARS system.

(2) *Reliability.* System reliability is the degree to which information is transferred accurately within a system. ET licensees must provide PARS licensees with reliability equal to the overall reliability of their system. For digital data systems, reliability is measured by the percent of time the bit error rate (BER) exceeds a desired value, and for analog or digital voice transmissions, it is measured by the percent of time that audio signal quality meets an established threshold. If an analog voice system is replaced with a digital voice system, only the resulting frequency response, harmonic distortion, signal-to-noise ratio and its reliability will be considered in determining comparable reliability.

(3) *Operating Costs.* Operating costs are the cost to operate and maintain the PARS system. ET licensees must compensate PARS licensees for any increased recurring costs associated with the replacement facilities (e.g. additional rental payments, increased utility fees) for five years after relocation. ET licensees may satisfy this obligation by making a lump-sum payment based on present value using current interest rates. Additionally, the maintenance costs to the PARS licensee must be equivalent to the 2 GHz system in order for the replacement system to be considered comparable.

(g) The PARS licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(h) [Reserved]

(i) After April 25, 1996, all major modifications and extensions to existing PARS systems operating on channels in the 2110–2130 and 2160–2180 MHz bands will be authorized on a secondary basis to future ET operations. All other modifications will render the modified PARS license secondary to future ET operations unless the incumbent affirmatively justifies primary status and the incumbent PARS licensee establishes that the modification would not add to the relocation costs of ET licensees. Incumbent PARS licensees will maintain primary status for the following technical changes:

(1) Decreases in power;

(2) Minor changes (increases or decreases) in antenna height;

(3) Minor location changes (up to two seconds);

(4) Any data correction which does not involve a change in the location of an existing facility;

(5) Reductions in authorized bandwidth;

(6) Minor changes (increases or decreases) in structure height;

(7) Changes (increases or decreases) in ground elevation that do not affect centerline height;

(8) Minor equipment changes.

(j) *Sunset.* PARS licensees will maintain primary status in the 2110–2130 MHz and 2160–2180 MHz bands unless and until an ET licensee requires use of the spectrum. ET licensees are not required to pay relocation costs after the relocation rules sunset (*i.e.*, for the 2110–2130 MHz and 2160–2180 MHz bands, ten years after the first ET license is issued in the respective band). Once the relocation rules sunset, an ET licensee may require the incumbent to cease operations, provided that the ET licensee intends to turn on a system within interference range of the incumbent, as determined by TIA TSB 10–F or any standard successor. ET licensee notification to the affected PARS licensee must be in writing and must provide the incumbent with no less than six months to vacate the spectrum. After the six-month notice period has expired, the PARS licensee must turn its

license back into the Commission, unless the parties have entered into an agreement which allows the PARS licensee to continue to operate on a mutually agreed upon basis. If the parties cannot agree on a schedule or an alternative arrangement, requests for extension will be accepted and reviewed on a case-by-case basis. The Commission will grant such extensions only if the incumbent can demonstrate that:

(1) It cannot relocate within the six-month period (*e.g.*, because no alternative spectrum or other reasonable option is available), and;

(2) The public interest would be harmed if the incumbent is forced to terminate operations (*e.g.*, if public safety communications services would be disrupted).

(k) *Reimbursement and relocation expenses in the 2110–2130 MHz and 2160–2180 MHz bands.* Whenever an ET licensee in the 2110–2130 MHz and 2160–2180 MHz band relocates a paired PARS link with one path in the 2110–2130 MHz band and the paired path in the 2160–2180 MHz band, the ET license will be entitled to reimbursement pursuant to the procedures described in §§ 27.1160 through 27.1174 of this chapter.

[61 FR 29689, June 12, 1996, as amended at 70 FR 19309, Apr. 13, 2005; 71 FR 29834, May 24, 2006]

§ 22.603 488–494 MHz fixed service in Hawaii.

Before filing applications for authorization of inter-island control and/or repeater stations, applicants must coordinate the planned channel usage with existing licensees and other applicants with previously filed applications, using the procedure outlined in § 22.150. Applicants and licensees shall cooperate fully and make reasonable efforts to resolve any channel usage conflicts. In situations where technical solutions to such conflicts cannot be devised, the FCC may select a channel or channels to assign or may designate the application(s) for hearing. To be acceptable for filing, applications and major technical amendments must contain a certification that coordination has been completed and an exhibit listing the name(s) of the licensees and applicants with which the planned channel usage has been coordinated.

POINT-TO-MULTIPOINT OPERATION

§ 22.621 Channels for point-to-multipoint operation.

The following channels are allocated for assignment to transmitters utilized within point-to-multipoint systems that support transmitters that provide public mobile service. Unless otherwise indicated, all channels have a bandwidth of 20 kHz and are designated by their center frequencies in MegaHertz. No new licenses will be issued for any 900 MHz frequencies in this section. See part 101, subpart O of this chapter for treatment of incumbents and for new licensing procedures. Incumbents under part 22 are subject to the restrictions of part 101, subpart O of this chapter but may make permissible modifications, transfers, assignments, or renew their licenses using procedures, forms, fees, and filing requirements of part 22.

Public Mobile Pool

(25 kHz bandwidth)

928.8625	959.8625	928.9375	959.9375
928.8875	959.8875	928.9625	959.9625
928.9125	959.9125	928.9875	959.9875

(12.5 kHz bandwidth)

928.85625	959.85625	928.93125	959.93125
928.86875	959.86875	928.94375	959.94375
928.88125	959.88125	928.95625	959.95625
928.89375	959.89375	928.96875	959.96875
928.90625	959.90625	928.98125	959.98125
928.91875	959.91875	928.99375	959.99375

Private Radio General Access Pool

(25 kHz bandwidth)

956.2625	956.3125	956.3625	956.4125
956.2875	956.3375	956.3875	956.4375
928.0125	952.0125	928.1875	952.1875
928.0375	952.0375	928.2125	952.2125
928.0625	952.0625	928.2375	952.2375
928.0875	952.0875	928.2625	952.2625
928.1125	952.1125	928.2875	952.2875
928.1375	952.1375	928.3125	952.3125
928.1625	952.1625	928.3375	952.3375

(12.5 kHz bandwidth)

956.25625	956.30625	956.35625	956.40625
956.26875	956.31875	956.36875	956.41875
956.28125	956.33125	956.38125	956.43125
956.29375	956.34375	956.39375	956.44375
928.00625	952.00625	928.18125	952.18125
928.01875	952.01875	928.19375	952.19375
928.03125	952.03125	928.20625	952.20625
928.04375	952.04375	928.21875	952.21875
928.05625	952.05625	928.23125	952.23125
928.06875	952.06875	928.24375	952.24375
928.08125	952.08125	928.25625	952.25625
928.09375	952.09375	928.26875	952.26875
928.10625	952.10625	928.28125	952.28125
928.11875	952.11875	928.29375	952.29375
928.13125	952.13125	928.30625	952.30625
928.14375	952.14375	928.31875	952.31875
928.15625	952.15625	928.33125	952.33125
928.16875	952.16875	928.34375	952.34375