

§ 90.619

47 CFR Ch. I (10-1-04 Edition)

TABLE 4B—SMR CATEGORY 896-901/935-940 MHz BAND-CHANNELS (200 CHANNELS)—Continued

Block	Channel Nos.
P	301-302-303-304-305-306-307-308-309-310
Q	321-322-323-324-325-326-327-328-329-330
R	341-342-343-344-345-346-347-348-349-350
S	361-362-363-364-365-366-367-368-369-370
T	381-382-383-384-385-386-387-388-389-390

[47 FR 41032, Sept. 16, 1982, as amended at 47 FR 51883, Nov. 18, 1982; 51 FR 37404, Oct. 22, 1986; 52 FR 3662, Feb. 5, 1987; 52 FR 29856, Aug. 12, 1987; 53 FR 1026, Jan. 15, 1988; 53 FR 12156, Apr. 13, 1988; 54 FR 38682, Sept. 20, 1989; 58 FR 31476, June 3, 1993; 58 FR 44962, Aug. 25, 1993; 60 FR 21990, May 4, 1995; 60 FR 48918, Sept. 21, 1995; 61 FR 6156, Feb. 16, 1996; 61 FR 6576, Feb. 21, 1996; 62 FR 18934, Apr. 17, 1997; 62 FR 41214, July 31, 1997]

TABLE 4C—SMR CATEGORY—CHICAGO PLAN ^{2, 3}

Group No.	Channel Nos.
401 ¹	401 through 410
411	411-447-483-519-555
412	412-448-484-520-556
413	413-449-485-521-557
414	414-450-486-522-558
415	415-451-487-523-559
416	416-452-488-524-560
417	417-453-489-525-561
418	418-454-490-526-562
419	419-455-491-527-563
420	420-456-492-528-564
421	421-457-493-529-565
422	422-458-494-530-566
423	423-459-495-531-567
424	424-460-496-532-568
425	425-461-497-533-569
426	426-462-498-534-570
427	427-463-499-535-571
428	428-464-500-536-572
429	429-465-501-537-573
430	430-466-502-538-574
431	431-467-503-539-575
432	432-468-504-540-576
433	433-469-505-541-577
434	434-470-506-542-578
435	435-471-507-543-579
436	436-472-508-544-580
437	437-473-509-545-581
438	438-474-510-546-582
439	439-475-511-547-583
440	440-476-512-548-584
441	441-477-513-549-585
442	442-478-514-550-586
443	443-479-515-551-587
444	444-480-516-552-588
445	445-481-517-553-589
446	446-482-518-554-590
591	591-592-593-594-595
596	596-597-598-599-600

¹ Reserved for contiguous assignments or as a frequency pool for assignments to systems with odd number of channels.

² These frequencies will be authorized only in the area encompassed by a 113 km (70 mile) radius centered at 41°52'28" N. 87°38'22" W.

³ All stations located beyond the 113 km (70 mile) distance authorized on or before August 16, 1982 to use these frequencies may continue to do so. Stations beyond the 113 km (70 mile) distance authorized after August 16, 1982, shall employ frequencies listed in table 4A subject to the provisions of § 90.621 (b) or (c) as applicable.

§ 90.619 Frequencies available for use in the U.S./Mexico and U.S./Canada border areas.

(a) U.S./Mexico border area. The channels listed in tables 1A, 2A, 3A and 4A are offset 12.5 kHz lower in frequency than those specified in the 806-821/851-866 MHz table in § 90.613. The Channel 201 base frequency will be 856.000 MHz, followed by Channel 202 at 856.025 MHz and proceeding with uniform 25 kHz channeling to Channel 400 at 860.975 MHz. Mobile station frequencies will be 45 MHz lower in frequency. These channels are available for assignment for conventional or trunked systems only in areas 110 kilometers (68.4 miles) or less from the U.S./Mexico border. Stations located on Mt. Lemmon, serving the Tucson, AZ area, will only be authorized offset frequencies. The channels listed in tables 2B, 3B, and 4B correspond to those specified in the 896-901/935-940 MHz table in § 90.613 and are not offset. Mobile station frequencies will be 39 MHz lower in frequency. The frequencies listed in tables 2B, 3B, and 4B are not available for licensing in the U.S./Mexico border area until June 11, 1993.

(1) Table 1A lists the channels in the 806-821/851-866 MHz band that are available for assignment to eligible applicants in the Public Safety Category which consists of licensees eligible in the Public Safety Pool of subpart B of this part. Specialized Mobile Radio Systems (SMRS) will not be authorized in this category. These channels are available for intercategory sharing as indicated in § 90.621(g).

TABLE 1—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY-806-821/851-866 MHz BAND (85 CHANNELS)

Offset group No.	Offset channel Nos.
201 ¹	241-281-321-361
202	202-242-282-322-362
203	203-243-283-323-363

TABLE 1—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY-806-821/851-866 MHz BAND (85 CHANNELS)—Continued

Offset group No.	Offset channel Nos.
204	204-244-284-324-364
205	205-245-285-325-365
206	206-246-286-326-366
207	207-247-287-327-367
208	208-248-288-328-368
209	209-249-289-329-369
210	210-250-290-330-370
211	211-251-291-331-371
401	401-441-481-521-561
403	403-443-483-523-563
405	405-445-485-525-565
407	407-447-487-527-567
409	409-449-489-529-569
411	411-451-491-531-571

¹ Offset Group 201 is available for conventional system use only. Offset Channel 201 is not available for use in the U.S./Mexico border area.

(2) Certain channels in the 821-824/866-869 MHz band are also available to eligible applicants in the Public Safety Category in areas within 110 kilometers (68.4 miles) of the U.S./Mexico border. These channels will be assigned according to the policies defined in the *Report and Order* of Gen. Docket No. 87-112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87-112: channels 601, 639, 677, 715, and 753. Certain channels in the 896-901/935-940 MHz band are also available in areas within 110 kilometers (68.4 miles) of the U.S./Mexico border. The specific channels that are available for licensing in the bands 821-824/866-869 and 896-901/935-940 MHz within 110 kilometers (68.4 miles) of the Mexico border are listed in tables 1B, 2B, 3B, and 4B and are subject to Effective Radiated Power (ERP) and Antenna Height limitations as indicated in table 1C. In addition, all channels designated for use within Mexico in the 821-824/866-869 MHz and 896-901/935-940 MHz bands are available for assignment to U.S. stations within 110 kilometers (68.4 miles) of the Mexico border if the maximum power flux density (pfd) of the station's transmitted signal at any point at or beyond the border does not exceed -107 dB(W/m²). The spreading loss must be calculated using the free space formula taking into account any antenna discrimination in the direction of the border. Authorizations for stations using channels allotted to Mexico on a pri-

mary basis will be secondary to Mexican operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding -107 dB(W/m²).

TABLE 1B—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY 821-824/866-869 MHz BAND (107 CHANNELS)

Channel	Base frequency	Mobile frequency	Country
601	866.0125	821.0125	Both countries.
	866.0250	821.0250	Not available.
602	866.0375	821.0375	U.S.
603	866.0500	821.0500	U.S.
604	866.0625	821.0625	U.S.
605	866.0750	821.0750	U.S.
606	866.0875	821.0875	U.S.
607	866.1000	821.1000	U.S.
608	866.1125	821.1125	U.S.
609	866.1250	821.1250	U.S.
610	866.1375	821.1375	U.S.
611	866.1500	821.1500	Guard channel.
612	866.1625	821.1625	Mexico.
613	866.1750	821.1750	Mexico.
614	866.1875	821.1875	Mexico.
615	866.2000	821.2000	Mexico.
616	866.2125	821.2125	Mexico.
617	866.2250	821.2250	Mexico.
618	866.2375	821.2375	Mexico.
619	866.2500	821.2500	Mexico.
620	866.2625	821.2625	Mexico.
621	866.2750	821.2750	Mexico.
622	866.2875	821.2875	Mexico.
623	866.3000	821.3000	Mexico.
624	866.3125	821.3125	Mexico.
625	866.3250	821.3250	Mexico.
626	866.3375	821.3375	Mexico.
627	866.3500	821.3500	Mexico.
628	866.3625	821.3625	Mexico.
629	866.3750	821.3750	Guard channel.
630	866.3875	821.3875	U.S.
631	866.4000	821.4000	U.S.
632	866.4125	821.4125	U.S.
633	866.4250	821.4250	U.S.
634	866.4375	821.4375	U.S.
635	866.4500	821.4500	U.S.
636	866.4625	821.4625	U.S.
637	866.4750	821.4750	U.S.
638	866.4875	821.4875	U.S.
	866.5000	821.5000	Not available.
639	866.5125	821.5125	Both countries.
	866.5250	821.5250	Not available.
640	866.5375	821.5375	U.S.
641	866.5500	821.5500	U.S.
642	866.5625	821.5625	U.S.
643	866.5750	821.5750	U.S.
644	866.5875	821.5875	U.S.
645	866.6000	821.6000	U.S.
646	866.6125	821.6125	U.S.
647	866.6250	821.6250	U.S.
648	866.6375	821.6375	U.S.
649	866.6500	821.6500	Guard channel.
650	866.6625	821.6625	Mexico.
651	866.6750	821.6750	Mexico.
652	866.6875	821.6875	Mexico.
653	866.7000	821.7000	Mexico.
654	866.7125	821.7125	Mexico.
655	866.7250	821.7250	Mexico.
656	866.7375	821.7375	Mexico.

TABLE 1B—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY 821–824/866–869 MHz BAND (107 CHANNELS)—Continued

Channel	Base frequency	Mobile frequency	Country
657	866.7500	821.7500	Mexico.
658	866.7625	821.7625	Mexico.
659	866.7750	821.7750	Mexico.
660	866.7875	821.7875	Mexico.
661	866.8000	821.8000	Mexico.
662	866.8125	821.8125	Mexico.
663	866.8250	821.8250	Mexico.
664	866.8375	821.8375	Mexico.
665	866.8500	821.8500	Mexico.
666	866.8625	821.8625	Mexico.
667	866.8750	821.8750	Guard channel.
668	866.8875	821.8875	U.S.
669	866.9000	821.9000	U.S.
670	866.9125	821.9125	U.S.
671	866.9250	821.9250	U.S.
672	866.9375	821.9375	U.S.
673	866.9500	821.9500	U.S.
674	866.9625	821.9625	U.S.
675	866.9750	821.9750	U.S.
676	866.9875	821.9875	U.S.
	867.0000	822.0000	Not available.
677	867.0125	822.0125	Both countries.
	867.0250	822.0250	Not available.
678	867.0375	822.0375	U.S.
679	867.0500	822.0500	U.S.
680	867.0625	822.0625	U.S.
681	867.0750	822.0750	U.S.
682	867.0875	822.0875	U.S.
683	867.1000	822.1000	U.S.
684	867.1125	822.1125	U.S.
685	867.1250	822.1250	U.S.
686	867.1375	822.1375	U.S.
687	867.1500	822.1500	Guard channel.
688	867.1625	822.1625	Mexico.
689	867.1750	822.1750	Mexico.
690	867.1875	822.1875	Mexico.
691	867.2000	822.2000	Mexico.
692	867.2125	822.2125	Mexico.
693	867.2250	822.2250	Mexico.
694	867.2375	822.2375	Mexico.
695	867.2500	822.2500	Mexico.
696	867.2625	822.2625	Mexico.
697	867.2750	822.2750	Mexico.
698	867.2875	822.2875	Mexico.
699	867.3000	822.3000	Mexico.
700	867.3125	822.3125	Mexico.
701	867.3250	822.3250	Mexico.
702	867.3375	822.3375	Mexico.
703	867.3500	822.3500	Mexico.
704	867.3625	822.3625	Mexico.
705	867.3750	822.3750	Guard channel.
706	867.3875	822.3875	U.S.
707	867.4000	822.4000	U.S.
708	867.4125	822.4125	U.S.
709	867.4250	822.4250	U.S.
710	867.4375	822.4375	U.S.
711	867.4500	822.4500	U.S.
712	867.4625	822.4625	U.S.
713	867.4750	822.4750	U.S.
714	867.4875	822.4875	U.S.
	867.5000	822.5000	Not available.
715	867.5125	822.5125	Both countries.
	867.5250	822.5250	Not available.
716	867.5375	822.5375	U.S.
717	867.5500	822.5500	U.S.
718	867.5625	822.5625	U.S.
719	867.5750	822.5750	U.S.

TABLE 1B—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY 821–824/866–869 MHz BAND (107 CHANNELS)—Continued

Channel	Base frequency	Mobile frequency	Country
720	867.5875	822.5875	U.S.
721	867.6000	822.6000	U.S.
722	867.6125	822.6125	U.S.
723	867.6250	822.6250	U.S.
724	867.6375	822.6375	U.S.
725	867.6500	822.6500	Guard channel.
726	867.6625	822.6625	Mexico.
727	867.6750	822.6750	Mexico.
728	867.6875	822.6875	Mexico.
729	867.7000	822.7000	Mexico.
730	867.7125	822.7125	Mexico.
731	867.7250	822.7250	Mexico.
732	867.7375	822.7375	Mexico.
733	867.7500	822.7500	Mexico.
734	867.7625	822.7625	Mexico.
735	867.7750	822.7750	Mexico.
736	867.7875	822.7875	Mexico.
737	867.8000	822.8000	Mexico.
738	867.8125	822.8125	Mexico.
739	867.8250	822.8250	Mexico.
740	867.8375	822.8375	Mexico.
741	867.8500	822.8500	Mexico.
742	867.8625	822.8625	Guard channel.
743	867.8750	822.8750	U.S.
744	867.8875	822.8875	U.S.
745	867.9000	822.9000	U.S.
746	867.9125	822.9125	U.S.
747	867.9250	822.9250	U.S.
748	867.9375	822.9375	U.S.
749	867.9500	822.9500	U.S.
750	867.9625	822.9625	U.S.
751	867.9750	822.9750	U.S.
752	867.9875	822.9875	U.S.
	868.0000	823.0000	Not available.
753	868.0125	823.0125	Both countries.
	868.0250	823.0250	Not available.
754	868.0375	823.0375	U.S.
755	868.0500	823.0500	U.S.
756	868.0625	823.0625	U.S.
757	868.0750	823.0750	U.S.
758	868.0875	823.0875	U.S.
759	868.1000	823.1000	U.S.
760	868.1125	823.1125	U.S.
761	868.1250	823.1250	U.S.
762	868.1375	823.1375	U.S.
763	868.1500	823.1500	Guard channel.
764	868.1625	823.1625	Mexico.
765	868.1750	823.1750	Mexico.
766	868.1875	823.1875	Mexico.
767	868.2000	823.2000	Mexico.
768	868.2125	823.2125	Mexico.
769	868.2250	823.2250	Mexico.
770	868.2375	823.2375	Mexico.
771	868.2500	823.2500	Mexico.
772	868.2625	823.2625	Mexico.
773	868.2750	823.2750	Mexico.
774	868.2875	823.2875	Mexico.
775	868.3000	823.3000	Mexico.
776	868.3125	823.3125	Mexico.
777	868.3250	823.3250	Mexico.
778	868.3375	823.3375	Mexico.
779	868.3500	823.3500	Mexico.
780	868.3625	823.3625	Guard channel.
781	868.3750	823.3750	U.S.
782	868.3875	823.3875	U.S.
783	868.4000	823.4000	U.S.
784	868.4125	823.4125	U.S.

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TABLE 1B—UNITED STATES/MEXICO BORDER AREA, PUBLIC SAFETY CATEGORY 821-824/866-869 MHZ BAND (107 CHANNELS)—Continued

Channel	Base frequency	Mobile frequency	Country
785	868.4250	823.4250	U.S.
786	868.4375	823.4375	U.S.
787	868.4500	823.4500	U.S.
788	868.4625	823.4625	U.S.
789	868.4750	823.4750	U.S.
790	868.4875	823.4875	U.S.
791	868.5000	823.5000	U.S.
792	868.5125	823.5125	U.S.
793	868.5250	823.5250	U.S.
794	868.5375	823.5375	U.S.
795	868.5500	823.5500	U.S.
796	868.5625	823.5625	U.S.
797	868.5750	823.5750	U.S.
798	868.5875	823.5875	U.S.
799	868.6000	823.6000	U.S.
800	868.6125	823.6125	Guard channel.
801	868.6250	823.6250	Mexico.
802	868.6375	823.6375	Mexico.
803	868.6500	823.6500	Mexico.
804	868.6625	823.6625	Mexico.
805	868.6750	823.6750	Mexico.
806	868.6875	823.6875	Mexico.
807	868.7000	823.7000	Mexico.
808	868.7125	823.7125	Mexico.
809	868.7250	823.7250	Mexico.
810	868.7375	823.7375	Mexico.
811	868.7500	823.7500	Mexico.
812	868.7625	823.7625	Mexico.
813	868.7750	823.7750	Mexico.
814	868.7875	823.7875	Mexico.
815	868.8000	823.8000	Mexico.
816	868.8125	823.8125	Mexico.
817	868.8250	823.8250	Mexico.
818	868.8375	823.8375	Mexico.
819	868.8500	823.8500	Mexico.
820	868.8625	823.8625	Mexico.
821	868.8750	823.8750	Mexico.
822	868.8875	823.8875	Mexico.
823	868.9000	823.9000	Mexico.
824	868.9125	823.9125	Guard channel.
825	868.9250	823.9250	U.S.
826	868.9375	823.9375	U.S.
827	868.9500	823.9500	U.S.
828	868.9625	823.9625	U.S.
829	868.9750	823.9750	U.S.
830	868.9875	823.9875	U.S.

TABLE 1C—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO ANTENNA HEIGHTS OF BASE STATIONS IN THE 821-824/866-869 MHZ AND 896-901/935-940 MHZ BANDS WITHIN 110 KILOMETERS (68.4 MILES) OF THE MEXICAN BORDER

Antenna height above mean sea level		ERP
Meters	Feet	Watts (maximum)
0-503	0-1650	500
504-609	1651-2000	350
610-762	2001-2500	200
763-914	2501-3000	140
915-1066	3001-3500	100
1067-1219	3501-4000	75
1220-1371	4001-4500	70

TABLE 1C—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO ANTENNA HEIGHTS OF BASE STATIONS IN THE 821-824/866-869 MHZ AND 896-901/935-940 MHZ BANDS WITHIN 110 KILOMETERS (68.4 MILES) OF THE MEXICAN BORDER—Continued

Antenna height above mean sea level		ERP
Meters	Feet	Watts (maximum)
1372-1523	4501-5000	65
Above 1523	Above 5000	5

(3) Tables 2A and 2B list the channels that are available for assignment to eligible applicants in the Industrial/Land Transportation Category (consisting of Power, Petroleum, Forest Products, Film and Video Production, Relay Press, Special Industrial, Manufacturers, Telephone Maintenance, Motor Carrier, Railroad, Taxicab, and Automobile Emergency licensees, as defined in §90.7). New applications for Specialized Mobile Radio systems will not be accepted for these channels after March 18, 1996.

TABLE 2A—UNITED STATES/MEXICO BORDER AREA, INDUSTRIAL/LAND TRANSPORTATION CATEGORY 806-821/851-866 MHZ BAND (60 CHANNELS):

Offset group No.	Offset channel Nos.
212	212-252-292-332-372
213	213-253-293-333-373
214	214-254-294-334-374
215	215-255-295-335-375
216	216-256-296-336-376
217	217-257-297-337-377
218	218-258-298-338-378
219	219-259-299-339-379
413	413-453-493-533-573
415	415-455-495-535-575
417	417-457-497-537-577
419	419-459-499-539-579

TABLE 2B—UNITED STATES/MEXICO BORDER AREA, INDUSTRIAL/LAND TRANSPORTATION CATEGORY 896-901/935-940 MHZ BAND (99 CHANNELS):

For multichannel systems, channels may be grouped vertically or horizontally as they appear in the table. Channels numbered above 200 may be used only subject to the power flux density limits stated in paragraph (a) (2) of this section:

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Channel Nos.	
31-32-33-34-35	231-232-233-234-235
36-37-38-39-40	236-237-238-239-240
71-72-73-74-75	271-272-273-274-275
76-77-78-79-80	276-277-278-279-280
111-112-113-114-115	311-312-313-314-315
116-117-118-119-120	316-317-318-319-320
151-152-153-154-155	351-352-353-354-355
156-157-158-159-160	356-357-358-359-360
191-192-193-194-195	391-392-393-394-395
196-197-198-199-200	396-397-398-399

(4) Tables 3A and 3B list the channels that are available for assignment to eligible applicants in the Business Radio Category. This category includes those entities eligible in the Industrial/Business Pool of subpart C of this part and does not include Special Mobilized Radio Systems as defined in § 90.603(c). These channels are available for inter-category sharing as indicated in § 90.621(g).

TABLE 3A—UNITED STATES/MEXICO BORDER AREA, BUSINESS CATEGORY 806-821/851-866 MHZ BANDS (60 CHANNELS)

Offset group No.	Offset channel Nos.
220	220-260-300-340-380
221	221-261-301-341-381
222	222-262-302-342-382
223	223-263-303-343-383
224	224-264-304-344-384
225	225-265-305-345-385
226	226-266-306-346-386
227	227-267-307-347-387
421	421-461-501-541-581
423	423-463-503-543-583
425	425-465-505-545-585
427	427-467-507-547-587

TABLE 3B—UNITED STATES/MEXICO BORDER AREA, BUSINESS CATEGORY 896-901/935-940 MHZ BAND (100 CHANNELS):

For multichannel systems, channels may be grouped vertically or horizontally as they appear in the table. Channels numbered above 200 may be used only subject to the power flux density limits stated in paragraph (a) (2) of this section.

Channel Nos.	
11-12-13-14-15	171-172-173-174-175
16-17-18-19-20	176-177-178-179-180
51-52-53-54-55	211-212-213-214-215
56-57-58-59-60	216-217-218-219-220
91-92-93-94-95	251-252-253-254-255
96-97-98-99-100	256-257-258-259-260
131-132-133-134-135	291-292-293-294-295
136-137-138-139-140	296-297-298-299-300

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331-332-333-334-335	371-372-373-374-375
336-337-338-339-340	376-377-378-379-380

(5) Tables 4A and 4B list the channels that are available for assignment for the SMR Category (consisting of Specialized Mobile Radio systems as defined in § 90.7).

These channels are not available for inter-category sharing.

TABLE 4A—UNITED STATES-MEXICO BORDER AREA, SMR AND GENERAL CATEGORIES 806-821/851-866 MHZ BAND (95 CHANNELS)

Spectrum block	Offset channel Nos.
EA-Based SMR Category (83 Channels)	
A	398-399-400.
B	429-431-433-435-437-439-469-471-473-475-477-479.
C	509-511-513-515-517-519-549-551-553-555-557-559-589-591-593-595-597-599.
G	229-272-349.
H	230-273-350.
I	231-274-351.
J	232-278-352.
K	233-279-353.
L	234-280-354.
M	235-309-358.
N	236-310-359.
O	237-311-360.
P	238-312-389.
Q	239-313-390.
R	240-314-391.
S	269-318-392.
T	270-319-393.
U	271-320-394.
V	228-268-308-348-388.
General Category (12 Channels)	
D	275-315
D1	355-395
E	276-316
E1	356-396
F	277-317
F1	357-397

TABLE 4B—UNITED STATES-MEXICO BORDER AREA, SMR CATEGORY 896-901/935-940 MHZ BAND (200 CHANNELS)

Block	Channel Nos.
Channels numbered above 200 may be used only subject to the power flux density limits at or beyond the Mexican border stated in paragraph (a)(2) of this section.	
A	1-2-3-4-5-6-7-8-9-10
B	21-22-23-24-25-26-27-28-29-30
C	41-42-43-44-45-46-47-48-49-50
D	61-62-63-64-65-66-67-68-69-70
E	81-82-83-84-85-86-87-88-89-90
F	101-102-103-014-105-106-107-108-109-110
G	121-122-123-124-125-126-127-128-129-130
H	141-142-143-144-145-146-147-148-149-150
I	161-162-163-164-165-166-167-168-169-170
J	181-182-183-184-185-186-187-188-189-190

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TABLE 4B—UNITED STATES-MEXICO BORDER AREA, SMR CATEGORY 896-901/935-940 MHZ BAND (200 CHANNELS)—Continued

Block	Channel Nos.
K	201-202-203-204-205-206-207-208-209-210
L	221-222-223-224-225-226-227-228-229-230
M	241-242-243-244-245-246-247-248-249-250
N	261-262-263-264-265-266-267-268-269-270
O	281-282-283-284-285-286-287-288-289-290
P	301-302-303-304-305-306-307-308-309-310
Q	321-322-323-324-325-326-327-328-329-330
R	341-342-343-344-345-346-347-348-349-350
S	361-362-363-364-365-366-367-368-369-370
T	381-382-383-384-385-386-387-388-389-390

(b) *U.S./Canada border area.* The following criteria shall govern the assignment of frequency pairs (channels) in the 806-821/851-866 and 896-901/935-940 MHz bands for stations located in the U.S./Canada border area. These channels are available for assignment for conventional or trunked systems in accordance with all applicable sections of this subpart. They are available for intercategory sharing as indicated in §90.621(g). Specific provisions for use of the 821-824/866-869 MHz bands in the U.S./Canada border area are contained in paragraph (c) of this section, and provisions for use of the 896-901/935-940 MHz bands in the U.S./Canada border are contained in paragraph (d) of this section.

(1) The U.S./Canada border area is divided into eight geographical regions with U.S. channel allocations shown in table 5.

TABLE 5—GEOGRAPHICAL REGIONS

Region	Location (longitude)	U.S. channel allocation
1	66° W-71° W (0-100 km from border) ..	300
2	71° W-81° W (0-100 km from border) ..	180
3	81° W-85° W (0-100 km from border) ..	420
4	85° W-121°-30' W (0-100 km from border).	300

TABLE 5—GEOGRAPHICAL REGIONS—Continued

Region	Location (longitude)	U.S. channel allocation
5	121°-30' W 127° W(0-140 km from border).	300
6	127° W-143° W (0-100 km from border).	300
7	66° W-121°-30' W (100-140 km from border).	600
8	127° W-143° W (100-140 km from border).	600

(2) Station authorizations in Regions 1-4 and Regions 6-8 will be subject to Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations as indicated in table 6. Stations in Region 5 will be subject to the ERP and antenna height above mean sea level limitations in table 8. Effective Radiated Power (ERP) is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. Effective Antenna Height is calculated by subtracting the Assumed Average Terrain Elevation (AATE) given in table 7 from the antenna height above mean sea level.

TABLE 6—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO EFFECTIVE ANTENNA HEIGHTS (EAH) OF BASE STATIONS IN REGIONS 1, 2, 3, 4, 6, 7, 8

Feet	Meters	Watts (maximum)
0-500	0-152	500
501-1000	153-305	125
1001-1500	306-457	40
1501-2000	458-609	20
2001-2500	610-762	10
2501-3000	763-914	10
3001-3500	915-1066	6
3501-4000	1067-1219	5
Above 4000	Above 1219	5

Table 7. Values of Assumed Average Terrain Elevation (AATE) Along the U.S./Canada Border

Longitude (λ) (°West)	Latitude (θ) (°North)	Assumed Average Terrain Elevation	
		Feet	Meters
65 < λ < 69	θ < 45	0	0
"	45 < θ < 46	300	91
"	θ ≥ 46	1000	305
69 < λ < 73	all	2000	609
73 < λ < 74	"	500	152
74 < λ < 78	"	250	76
78 < λ < 80	θ < 43	250	76
"	θ > 43	500	152
80 < λ < 90	all	600	183
90 < λ < 98	"	1000	305
98 < λ < 102	"	1500	457
102 < λ < 108	"	2500	762
108 < λ < 111	"	3500	1066
111 < λ < 113	"	4000	1219
113 < λ < 114	"	5000	1524
114 < λ < 121.5	"	3000	914
121.5 < λ < 127	"	0	0
↑	54 < θ < 56	0	0
λ > 127	56 < θ < 58	500	152
(Alaska - British Columbia/Yukon Territory Border)	58 < θ < 60	0	0
↓	60 < θ < 62	4000	1219
	62 < θ < 64	1600	488
	64 < θ < 66	1000	305
	66 < θ < 68	750	228
	68 < θ < 69.5	1500	457
	θ ≥ 69.5	0	0

TABLE 8—LIMITS OF EFFECTIVE RADIATED POWER (ERP) CORRESPONDING TO ANTENNA HEIGHTS ABOVE MEAN SEA LEVEL OF BASE STATIONS IN REGION 5

Antenna height above mean sea level		ERP watts (maximum)
Feet	Meters	
0 to 1,650	0 to 503	500
1,651 to 2,000	504 to 609	350
2,001 to 2,500	610 to 762	200
2,501 to 3,000	763 to 914	140
3,001 to 3,500	915 to 1,066	100
3,501 to 4,000	1,067 to 219	75
4,001 to 4,500	1,220 to 1,371	70
4,501 to 5,000	1,372 to 1,523	65
Above 5,000	Above 1,523	5

(3) The following frequency bands are available in each Region with the exception of those listed in § 90.619(b)(5).

Region(s)	Frequency bands (MHz)
1, 4, 5, 6	806.00-809.75/851.00-854.75 and 817.25-821.00/862.25-866.00.

Region(s)	Frequency bands (MHz)
2	806.00-808.25/851.00-853.25 and 818.75-821.00/863.75-866.00.
3	806.00-811.25/851.00-856.25 and 815.75-821.00/860.75-866.00.
7, 8	806.00-821.00/851.00-866.00.

(4) Coordination with Canada will be required:

(i) For frequencies in the 808.2625-809.7375/853.2625-854.7375 MHz and 817.2625-818.7375/862.2625-863.7375 MHz bands, for stations to be located in the geographical area in Region 1 enclosed by the United States border, the meridian 71° W and the line beginning at the intersection of 44°25'N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along meridian 70° W to the intersection of 45°45'N, then running West along 45°45'N to the intersection of the United States-Canada border.

(ii) For frequencies in the 808.2625–811.2375/853.2625–856.2375 MHz and 815.7625–818.7375/860.7625–863.7375 MHz bands, for stations to be located in the geographical area in Region 3 enclosed by the meridian 81° W longitude, the arc of a circle of 100 km radius centered at the intersection of 81° W longitude and the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 81° W longitude to intersect the United States-Canada border, and the United States-Canada border.

(5) Applicants requesting authorizations in the frequency bands in the geographical areas listed below shall submit documentation indicating compliance with the following protection criteria to the indicated Canadian television station. Protection to Canadian

television assignments and allotments is based on the field strength of an interfering mobile radio signal at the TV station's calculated Grade B contour (64 dBu) not exceeding the TV field strength by more than 20 dB (i.e., 84 dBu). The field strength of the TV assignment or allotment is calculated using the R6602 [F(50,50)] propagation curves and any land mobile base station interfering signal is calculated using the R6602 [F(50,10)] propagation curves at a receiving effective antenna height of 9.1 meters (30 feet). Where the calculated field strength of the TV assignment or allotment exceeds the Grade B contour value of 64 dBu at the Canada/U.S.A. border, the land mobile radio signal may not exceed the actual calculated TV field strength at the border by more than 20 dB.

Frequency bands (MHz)	Areas
852–853.25 MHz (Cornwall—TV Channel 63).	Area bounded by a line joining, clockwise, the following coordinates: starting at point 45°00'00" N. Lat., 74°38'00" W. Long., moving east along the Canada/USA border to point 44°59'30" N. Lat., 74°05'00" W. Long., moving south west to point 44°56'30" N. Lat., 74°08'00" W. Long. moving west to point 45°00'00" N. Lat., 74°38'00" W. Long. The second area is bounded by a line joining, clockwise, the following coordinates: 44°50'30" N. Lat., 75°17'30" W. Long., moving east along the Canada/USA border to point 44°55'30" N. Lat., 75°05'00" W. Long., moving south to point 44°55'00" N. Lat., 75°05'00" W. Long., moving south west to point 44°53'00" N. Lat., 75°06'30" W. Long., moving south west to point 44°48'30" N. Lat., 75°14'30" W. Long., and moving north west to point 44°50'30" N. Lat., 75°17'30" W. Long.
852–854.75 MHz (Vancouver—TV Channel 63).	Area bounded by a line joining, clockwise, the following coordinates: starting at point 49°00'00" N. Lat., 122°45'30" W. Long., moving east along the Canada/USA border to point 49°00'00" N. Lat., 122°05'00" W. Long., moving south west to point 48°57'30" N. Lat., 122°09'00" W. Long., moving west to point 48°59'00" N. Lat., 122°44'30" W. Long., and moving north to point 49°00'00" N. Lat., 122°45'30" W. Long.

(6) [Reserved]

(7) Frequencies in Regions 1–8 are designated in accordance with the following:

(i) As shown in §90.613, mobile and control station transmitting frequencies will commence with Channel No. 1 at 806.0125 MHz, followed by Channel No. 2 at 806.0375 MHz and proceed with uniform 25 kHz spacing to the band end, with Channel No. 600 at 820.9875 MHz. Corresponding base station frequencies, separated by 45 MHz from the mobile control frequencies, will commence with Channel No. 1 at 851.0125 MHz and end with Channel No. 600 at 865.9875 MHz.

(ii) Channels will be arranged into 5-channel groups. Because of the distribution and differing number of channels available for United States use in

Regions 1–8, channel spacing between channels in a 5-channel group vary as follows:

Region	Number of 5-channel groups	Spacing between channels in a 5-channel group (Channels)
1, 4, 5, 6	60	30
2	36	18
3	180	40
7, 8	120	40

¹ Region 3 also has ten (10) contiguous channels in each of the two allocated sub-bands.

(iii) The Public Safety Category consists of those entities eligible in the Public Safety Pool of subpart B of this part. The Industrial/Land Transportation Category consists of Power, Petroleum, Forest Products, Film and Video Production, Relay Press, Special

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Industrial, Manufacturers, Telephone Maintenance, Motor Carrier, Railroad, Taxicab, and Automobile Emergency licensees (as defined in § 90.7). The Business Radio Category consists of those entities eligible in the Industrial/Business Pool of subpart C of this part. Specialized Mobile Radio Systems (SMRS) will not be authorized in any of the above mentioned categories, but only in the SMRS category to those applicants eligible under § 90.603(c).

(8) Tables 9, 10, 11, and 12 list the channels available in Regions 1, 4, 5, and 6 for the categories of users indicated. Frequencies are given in § 90.613.

TABLE 9—PUBLIC SAFETY CATEGORY—85 CHANNELS
[Regions 1, 4, 5, 6]

Group No.	Channel No.
1	1-31-61-91-121
2	2-32-62-92-122
3	3-33-63-93-123
4	4-34-64-94-124
5	5-35-65-95-125
6	6-36-66-96-126
7	7-37-67-97-127
8	8-38-68-98-128
9	9-39-69-99-129
10	10-40-70-100-130
11	11-41-71-101-131
12	12-42-72-102-132
13	13-43-73-103-133
14	14-44-74-104-134
15	15-45-75-105-135
16	16-46-76-106-136
17	17-47-77-107-137

TABLE 10—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—60 CHANNELS
[Regions 1, 4, 5, 6]

Group No.	Channel No.
18	18-48-78-108-138
19	19-49-79-109-139
20	20-50-80-110-140
21	21-51-81-111-141
22	22-52-82-112-142
23	23-53-83-113-143
24	24-54-84-114-144
25	25-55-85-115-145
26	26-56-86-116-146
27	27-57-87-117-147
28	28-58-88-118-148
29	29-59-89-119-149

TABLE 11—BUSINESS CATEGORY—60 CHANNELS
[Regions 1, 4, 5, 6]

Group No.	Channel No.
451	451-481-511-541-571
452	452-482-512-542-572

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TABLE 11—BUSINESS CATEGORY—60 CHANNELS—Continued
[Regions 1, 4, 5, 6]

Group No.	Channel No.
453	453-483-513-543-573
454	454-484-514-544-574
455	455-485-515-545-575
456	456-486-516-546-576
457	457-487-517-547-577
458	458-488-518-548-578
459	459-489-519-549-579
460	460-490-520-550-580
461	461-491-521-551-581
462	462-492-522-552-582

TABLE 12—SMR AND GENERAL CATEGORIES—95 CHANNELS
[Regions 1, 4, 5, 6]

Spectrum block	Channel Nos.
EA-Based SMR Category (90 Channels)	
A	None
B	463 through 480
C	493 through 510, 523 through 540, 553 through 570, 583 through 600
G through V	None
General Category (5 Channels)	
D	None
D1	30
E	60
E1	90
F	120
F1	150

(9) Tables 13, 14 15, and 16 list the frequencies available in Region 2 for the categories of users indicated.

TABLE 13—PUBLIC SAFETY CATEGORY—50 CHANNELS
[Region 2]

Group No.	Channel Nos.
1	1-19-37-55-73
2	2-20-38-56-74
3	3-21-39-57-75
4	4-22-40-58-76
5	5-23-41-59-77
6	6-24-42-60-78
7	7-25-43-61-79
8	8-26-44-62-80
9	9-27-45-63-81
10	10-28-46-64-82

TABLE 14—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—35 CHANNELS
[Region 2]

Group No.	Channel Nos.
11	11-29-47-65-83
12	12-30-48-66-84
13	13-31-49-67-85

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TABLE 14—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—35 CHANNELS—Continued
[Region 2]

Group No.	Channel Nos.
14	14-32-50-68-86
15	15-33-51-69-87
16	16-34-52-70-88
17	17-35-53-71-89

TABLE 15—BUSINESS CATEGORY—35 CHANNELS
[Region 2]

Group No.	Channel Nos.
511	511-529-547-565-583
512	512-530-548-566-584
513	513-531-549-567-585
514	514-532-550-568-586
515	515-533-551-569-587
516	516-534-552-570-588
517	517-535-553-571-589

TABLE 16—SMR AND GENERAL CATEGORIES—60 CHANNELS
[Region 2]

Spectrum block	Channel Nos.
SMR Category (55 Channels)	
A	None.
B	None.
C	518 through 528, 536 through 546, 554 through 564, 572 through 582, 590 through 600.
G through V	None.
General Category (5 Channels)	
D	18
D1	36
E	54-72
E1	90
F	None
F1	None

(10) Tables 17, 18, 19, and 20 list the frequencies available in Region 3 for the categories of users indicated.

TABLE 17—PUBLIC SAFETY—115 CHANNELS
[Region 3]

Group No.	Channel Nos.
1	1-41-81-121-161
2	2-42-82-122-162
3	3-43-83-123-163
4	4-44-84-124-164
5	5-45-85-125-165
6	6-46-86-126-166
7	7-47-87-127-167
8	8-48-88-128-168
9	9-49-89-129-169
10	10-50-90-130-170
11	11-51-91-131-171
12	12-52-92-132-172

TABLE 17—PUBLIC SAFETY—115 CHANNELS—Continued
[Region 3]

Group No.	Channel Nos.
13	13-53-93-133-173
14	14-54-94-134-174
15	15-55-95-135-175
16	16-56-96-136-176
17	17-57-97-137-177
18	18-58-98-138-178
19	19-59-99-139-179
20	20-60-100-140-180
21	21-61-101-141-181
22	22-62-102-142-182
Contiguous channels	201, 202, 203, 204, 205

TABLE 18—INDUSTRIAL/LAND TRANSPORTATION CATEGORY—85 CHANNELS
[Region 3]

Group No.	Channel Nos.
23	23-63-103-143-183
24	24-64-104-144-184
25	25-65-105-145-185
26	26-66-106-146-186
27	27-67-107-147-187
28	28-68-108-148-188
29	29-69-109-149-189
30	30-70-110-150-190
31	31-71-111-151-191
32	32-72-112-152-192
33	33-73-113-153-193
34	34-74-114-154-194
35	35-75-115-155-195
36	36-76-116-156-196
37	37-77-117-157-197
Contiguous channels	391, 392, 393, 394, 395, 396, 397, 398, 399, 400

TABLE 19—BUSINESS CATEGORY—85 CHANNELS
[Region 3]

Group No.	Channel Nos.
401	401-441-481-521-561
402	402-442-482-522-562
403	403-443-483-523-563
404	404-444-484-524-564
405	405-445-485-525-565
406	406-446-486-526-566
407	407-447-487-527-567
408	408-448-488-528-568
409	409-449-489-529-569
410	410-450-490-530-570
411	411-451-491-531-571
412	412-452-492-532-572
413	413-453-493-533-573
414	414-454-494-534-574
415	415-455-495-535-575
416	416-456-496-536-576
Contiguous channels	206, 207, 208, 209, 210

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TABLE 20—SMR AND GENERAL CATEGORIES (135 CHANNELS) [Region 3]

Spectrum Block	Channel Nos.
SMR Category (120 Channels)	
A	417 through 420
B	421 through 440, 457 through 480
C	497 through 520, 537 through 560, 577 through 600
G through V	None
General Category (15 Channels)	
D	38-39-40
D1	158-159
E	78-79-80
E1	160-198
F	118-119-120
F1	199-200

(11) Tables 21, 22, 23, and 24 list the frequencies available in Regions 7 and 8 for the categories of users indicated.

TABLE 21—(REGIONS 7, 8) PUBLIC SAFETY CATEGORY—170 CHANNELS

Group No.	Channel Nos.
1	1-41-81-121-161
2	2-42-82-122-162
3	3-43-83-123-163
4	4-44-84-124-164
5	5-45-85-125-165
6	6-46-86-126-166
7	7-47-87-127-167
8	8-48-88-128-168
9	9-49-89-129-169
10	10-50-90-130-170
11	11-51-91-131-171
12	12-52-92-132-172
13	13-53-93-133-173
14	14-54-94-134-174
15	15-55-95-135-175
16	16-56-96-136-176
17	17-57-97-137-177
18	18-58-98-138-178
19	19-59-99-139-179
20	20-60-100-140-180
21	21-61-101-141-181
22	22-62-102-142-182
23	23-63-103-143-183
24	24-64-104-144-184
25	25-65-105-145-185
26	26-66-106-146-186
27	27-67-107-147-187
28	28-68-108-148-188
29	29-69-109-149-189
30	30-70-110-150-190
31	31-71-111-151-191
32	32-72-112-152-192
33	33-73-113-153-193
34	34-74-114-154-194

TABLE 22—(REGIONS 7, 8) INDUSTRIAL/LAND TRANSPORTATION CATEGORY—120 CHANNELS

Group No.	Channel Nos.
201	201-241-281-321-361

TABLE 22—(REGIONS 7, 8) INDUSTRIAL/LAND TRANSPORTATION CATEGORY—120 CHANNELS—Continued

Group No.	Channel Nos.
202	202-242-282-322-362
203	203-243-283-323-363
204	204-244-284-324-364
205	205-245-285-325-365
206	206-246-286-326-366
207	207-247-287-327-367
208	208-248-288-328-368
209	209-249-289-329-369
210	210-250-290-330-370
211	211-251-291-331-371
212	212-252-292-332-372
213	213-253-293-333-373
214	214-254-294-334-374
215	215-255-295-335-375
216	216-256-296-336-376
217	217-257-297-337-377
218	218-258-298-338-378
219	219-259-299-339-379
220	220-260-300-340-380
221	221-261-301-341-381
222	222-262-302-342-382
223	223-263-303-343-383
224	224-264-304-344-384

TABLE 23—(REGIONS 7, 8) BUSINESS CATEGORY—120 CHANNELS

Group No.	Channel Nos.
401	401-441-481-521-561
402	402-442-482-522-562
403	403-443-483-523-563
404	404-444-484-524-564
405	405-445-485-525-565
406	406-446-486-526-566
407	407-447-487-527-567
408	408-448-488-528-568
409	409-449-489-529-569
410	410-450-490-530-570
411	411-451-491-531-571
412	412-452-492-532-572
413	413-453-493-533-573
414	414-454-494-534-574
415	415-455-495-535-575
416	416-456-496-536-576
417	417-457-497-537-577
418	418-458-498-538-578
419	419-459-499-539-579
420	420-460-500-540-580
421	421-461-501-541-581
422	422-462-502-542-582
423	423-463-503-543-583
424	424-464-504-544-584

TABLE 24—(REGIONS 7, 8) SMR AND GENERAL CATEGORIES—190 CHANNELS

Spectrum block	Channel Nos.
SMR Category (172 Channels)	
A	389 through 400
B	425 through 440, 465 through 480
C	505 through 520, 545 through 560, 585 through 600
G	155-229-269-309-349

TABLE 24—(REGIONS 7, 8) SMR AND GENERAL CATEGORIES—190 CHANNELS—Continued

Spectrum block	Channel Nos.
H	156-230-270-310-350
I	157-231-271-311-351
J	158-232-272-312-352
K	159-233-273-313-353
L	160-234-274-314-354
M	195-235-275-315-355
N	196-236-276-316-356
O	197-237-277-317-357
P	198-238-278-318-358
Q	199-239-279-319-359
R	200-240-280-320-360
S	225-265-305-345-385
T	226-266-306-346-386
U	227-267-307-347-387
V	228-268-308-348-388
General Category (18 Channels)	
D	35 through 37
D1	38 through 40
E	75 through 77
E1	78 through 80
F	115 through 117
F1	118 through 120

(c) Use of frequencies in the 821-824/866-869 MHz band (Channels 601-830) in the U.S./Canada border area. The following criteria shall govern the assignment of frequency pairs (channels) in the 821-824/866-869 MHz band for stations located in the U.S./Canada border area. They are available for assignments for conventional or trunked systems in accordance with applicable sections of this subpart and the Report and Order in Gen. Docket No. 87-112. They are not available for intercategory sharing.

(1) Channels 601-830, as listed in §90.613 table of 806-824/851-869 MHz Channel Designations, are available to eligible applicants in the Public Safety Category for use in the U.S./Canada border area as shown in table 25. Additionally, Channels 601, 639, 677, 715, and 753 are available in all regions only for mutual aid purposes.

TABLE 25—CHANNELS IN THE 821-824/866-869 MHz FREQUENCY BANDS AVAILABLE IN THE U.S./CANADA BORDER AREA

Region	Location (longitude)	Channels
1	66° W-71° W (0-100 km from border)	715-830
2	71° W-80°30' W (0-100 km from border)	760-830
3	80°30' W-85° W (0-100 km from border)	636-830
4	85° W-121°30' W (0-100 km from border).	715-830
5	121°30' W-127° W (0-140 km from border).	715-830
6	127° W-143° W (0-100 km from border)	715-830

TABLE 25—CHANNELS IN THE 821-824/866-869 MHz FREQUENCY BANDS AVAILABLE IN THE U.S./CANADA BORDER AREA—Continued

Region	Location (longitude)	Channels
7	66° W-121°30' W (100-140 km from border).	601-830
8	127° W-143° W (100-140 km from border).	601-830

Note: For assignments in the 821-824/866-869 MHz bands, the cities of Akron, Ohio (41°05'00" N, 81°30'40" W) and Youngstown, Ohio (41°05'57" N, 80°39'02" W) are considered outside of Region 3, and Syracuse, New York (43°03'04" N, 76°09'14" W) is considered outside of Region 2. These cities are defined as an area with the given center coordinates and encompassing a circle of 30 km radius.

(2) All frequency assignments made pursuant to paragraph (c)(1) of this section shall comply with the requirements of §90.619(b)(2).

(3) In Region 5, Channels 601-714 may be authorized in the United States under the following conditions:

(i) An assignment may be made if the predicted power flux density (PFD) of a proposed station's signal does not exceed -107 dBW/m² at the border. The prediction of the PFD is calculated based upon a modified Longley-Rice point-to-point propagation model with time and location variabilities of 10 percent¹ and 3-second digitized terrain data.²

¹G.A. Hufford, A.G. Longley, and W.A. Kissick, *A guide to the use of the ITS irregular terrain model in the area prediction mode*, NTIA Report 82-100. (Available from U.S. Department of Commerce, National Technical and Information Service (NTIS), Springfield, VA 22161. Accession number PB-217977.)

A.G. Longley and P.L. Rice, *Prediction of tropospheric radio transmission loss over irregular terrain—a computer method 1968*, ESSA Technical Report ERL 79-ITS 67. (Available from NTIS, Accession number AD-676-874.)

P.L. Rice, A.G. Longley, K.A. Norton, and A.P. Barsis, *Transmission loss predictions for tropospheric communication circuits*, National Bureau of Standards Technical Note 101, Volumes I and II. (Available from NTIS, Accession numbers AD-687-820 and AD-687-821.)

²Level 1-Digital Terrain Elevation Data, United States Defense Mapping Agency. (Available from National Cartographic Information Center, U.S. Geological Survey, 507 National Center, Reston, VA 22092 as *Digital Elevation Model Data* in 1°x1° units. Two of these units are required to cover each 1°x2° map (1:250,000-scale quadrangle) from which the data were produced.

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(ii) Authorizations for Channels 601-714 in Region 5 are secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding -107 dBW/m² at or beyond the U.S./Canada border.

(4) Channel assignments for stations to be located in the geographical area in Region 1 enclosed by the United States-Canada border, the meridian 71°W and the line beginning at the intersection of 44°25' N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along meridian 70° W to the intersection of 45°45' N, then running West along 45°45' N to the intersection of the United States-Canada border, will be only for even numbered channels beginning with Channel 716 and ending with Channel 758.

(5) Channel assignments for stations to be located in the geographical area in Region 3 enclosed by the meridian 81° W longitude, the arc of a circle of 100 km radius centered at 42°39'30" N latitude 81° W longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80°30' W longitude to intersect the United States-Canada border West of 81° W, and the United States-Canada border, will be only for even numbered channels beginning with Channel 636 and ending with Channel 758. Coordination with Canada will be required for these channels. U.S. stations must protect Canadian stations operating on channels 636 through 758 within an area of 30 km radius from the center city coordinates of London, Ontario (42°59' N, 81°14' W).

(6) *Additional channels available.*—The channels listed in table 26 are available for assignment in Regions 1-6 if the maximum power flux density (PFD) of the station's transmitted signal does not exceed the limits specified in tables 27 and 28. The spreading loss shall be calculated using the free space formula taking into account an antenna discrimination in the direction of the border.

TABLE 26—ADDITIONAL CHANNELS AVAILABLE
[Regions 1-6]

Region	Channel No.'s	Effective radiated power
1	601-714	See Table 29
2	601-759	See Table 29
3	601-635	See Table 29
4	601-714	See Table 29
5	601-714	See Table 30
6	601-714	See Table 29

Authorizations for stations using these channels will be secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station's transmitted signal exceeding the values specified in tables 29 or 30 at or beyond the U.S./Canada border.

(d) *Use of frequencies in the 896-901/935-940 MHz band (Channels 1-399) in the U.S./Canada border area.* The following criteria shall govern the assignment of frequency pairs (channels) in the 896-901/935-940 MHz band for stations located in the U.S./Canada border area. They are available for assignments for conventional or trunked systems in accordance with applicable sections of this subpart.

(1) Channels 1-399, as listed in §90.613 table of 896-901/935-940 MHz Channel Designations, are available to eligible applicants for use in the U.S./Canada border area as shown in table 27. Additionally, Channels 71, 75, 79, 151, 155, and 159 are available in all regions only for implementation of an Advanced Train Control System as defined in 3 FCC Rcd 427 (1988) (Advanced Train Control Waiver).

TABLE 27—CHANNELS IN THE 896-901/935-940 MHz FREQUENCY BANDS AVAILABLE IN THE U.S./CANADA BORDER AREA

Region	Location (longitude)	Channels
1	66° W-71° W. (0-100 km from border) ...	1-200, 398, 399
2	71° W-80°30' W (0-100 km from border)	1-120
3	80°30' W-85° W (0-100 km from border)	1-340
4	85° W-121°30' W (0-100 km from border).	1-200, 398, 399
5	121°30' W-127° W (0-140 km from border).	1-200, 398, 399
6	127° W-143° W (0-100 km from border)	1-200, 398, 399
7	66° W-121°30' W (100-140 km from border).	1-399

TABLE 27—CHANNELS IN THE 896–901/935–940 MHz FREQUENCY BANDS AVAILABLE IN THE U.S./CANADA BORDER AREA—Continued

Region	Location (longitude)	Channels
8	127° W–143° W (100–140 km from border).	1–399

Note: For assignments in the 896–901/935–940 MHz bands, the cities of Akron, Ohio (41°05′00″ N, 81°30′40″ W) and Youngstown, Ohio (41°05′57″ N, 80°39′02″ W) are considered outside of Region 3, and Syracuse, New York (43°03′04″ N, 76°09′14″ W) is considered outside of Region 2. These cities are defined as an area with the given center coordinates and encompassing a circle of 30 km radius.

(2) All frequency assignments made pursuant to paragraph (d)(1) of this section shall comply with the requirements of §90.619(b)(2).

(3) In Region 5, Channels 201–397 may be authorized in the United States under the following conditions:

(i) An assignment may be made if the predicted power flux density (PFD) of a proposed station’s signal does not exceed –107 dBW/m² at the border. The prediction of the PFD is calculated based upon a modified Longley-Rice point-to-point propagation model with time and location variabilities of 10 percent³ and 3-second digitized terrain data⁴.

(ii) Authorizations for Channels 201–397 in Region 5 are secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station’s transmitted signal exceeding –107 dBW/m² at or beyond the U.S./Canada border.

(4) Channel assignments for stations to be located in the geographical area in Region 1 enclosed by the United States-Canada border, the meridian 71° W and the line beginning at the intersection of 44°25′ N, 71° W, then running by great circle arc to the intersection of 45° N, 70° W, then North along meridian 70° W to the intersection of 45°45′ N, then running West along 45°45′ N to the intersection of the United States-Canada border, will be only for channels 121 through 160, inclusive, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels.

³See note 1, paragraph (c) of this section.

⁴See note 2, paragraph (c) of this section.

(5) Channel assignments for stations to be located in the geographical area in Region 3 enclosed by the meridian of 81° W longitude, the arc of a circle of 100 km radius centered at 42°39′30″ N latitude and 81° W longitude at the northern shore of Lake Erie and drawn clockwise from the southerly intersection with 80°30′ W longitude to intersect the United States-Canada border West of 81° W, and the United States-Canada border, will be only for channels 121 through 230, inclusive, and will be limited to assignments with 11 kHz or less necessary bandwidth. Coordination with Canada will be required for these channels. U.S. stations must protect Canadian stations operating on channels 121 through 230 within an area of 30 km radius from the center city coordinates (referenced to North American Datum 1983 (NAD83)) of London, Ontario (42°59′00.1″ N, 81°13′59.5″ W).

(6) *Additional channels available*—The channels listed in table 28 are available for assignment in Regions 1–6 if the maximum power flux density (PFD) of the station’s transmitted signal does not exceed the limits specified in tables 29 and 30. The spreading loss shall be calculated using the free space formula taking into account any antenna discrimination in the direction of the border.

TABLE 28—ADDITIONAL CHANNELS AVAILABLE [Regions 1–6]

Region	Channel No.’s	Effective radiated power
1	201–397	See Table 29
2	121–399	See Table 29
3	341–399	See Table 29
4	201–397	See Table 29
5	201–397	See Table 30
6	201–397	See Table 29

Authorizations for stations using these channels will be secondary to Canadian operations and conditioned to require that licensees take immediate action to eliminate any harmful interference resulting from the station’s transmitted signal exceeding the values specified in tables 29 or 30 at or beyond the U.S./Canada border.

TABLE 29—MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO EFFECTIVE ANTENNA HEIGHT [Regions 1, 2, 3, 4, and 6]

Effective antenna height (EAH)		PFD (dBW/m ²)
Feet	Meters	
0-500	0-152	-84
501-1000	153-305	-90
1001-1500	306-457	-95
1501-2000	458-609	-98
2001-2500	610-762	-101
2501-3000	763-914	-101
3001-3500	915-1066	-103
3501-4000	1067-1219	-104
Above 4000	Above 1219	-104

TABLE 30—MAXIMUM POWER FLUX DENSITY (PFD) AT THE U.S./CANADA BORDER CORRESPONDING TO ANTENNA HEIGHT ABOVE MEAN SEA LEVEL [Region 5]

Antenna height above mean sea level		PFD (dBW/m ²)
Feet	Meters	
0-1650	0-503	-87.0
1651-2000	504-609	-88.5
2001-2500	610-762	-91.0
2501-3000	763-914	-92.5
3001-3500	915-1066	-94.0
3501-4000	1067-1219	-95.0
4001-4500	1220-1371	-95.5
4501-5000	1372-1523	-96.0
Above 5000	Above 1523	-107.0

(Secs. 4(i) and 303, Communications Act, as amended, and 5 U.S.C. 553 (b)(3)(B) and (d)(1)) [47 FR 41032, Sept. 16, 1982; 47 FR 41045, Sept. 16, 1982; 47 FR 51883, Nov. 18, 1982, as amended at 48 FR 51928, Nov. 15, 1983; 49 FR 22094, May 25, 1984; 50 FR 12261, Mar. 28, 1985; 52 FR 3662, Feb. 5, 1987; 55 FR 42571, Oct. 22, 1990; 56 FR 41469, Aug. 21, 1991; 57 FR 55146, Nov. 24, 1992; 58 FR 31476, June 3, 1993; 58 FR 44963, Aug. 25, 1993; 59 FR 31558, June 20, 1994; 60 FR 48918, Sept. 21, 1995; 61 FR 6156, Feb. 16, 1996; 61 FR 6577, Feb. 21, 1996; 62 FR 18935, Apr. 17, 1997; 62 FR 41214, July 31, 1997; 63 FR 68968, Dec. 14, 1998; 64 FR 71054, Dec. 20, 1999]

§ 90.621 Selection and assignment of frequencies.

(a) Applicants for frequencies in the Public Safety, Industrial/Land Transportation, and Business Categories must specify on the application the frequencies on which the proposed system will operate pursuant to a recommendation by the applicable frequency coordinator. Applicants for frequencies in the SMR Category must request specific frequencies by including

in their applications the frequencies requested.

(1) For trunked systems, the assignment of frequencies will be made in accordance with applicable loading criteria and in accordance with the following:

(i) Channels will be chosen and assigned in accordance with §§ 90.615, 90.617, or 90.619.

(ii) A mobile station is authorized to transmit on any frequency assigned to its associated base station.

(iii) There are no limitations on the number of frequencies that may be trunked. Authorizations for non-SMR stations may be granted for up to 20 trunked frequency pairs at a time in accordance with the frequencies listed in §§ 90.615, 90.617, and 90.619.

(2) For conventional systems the assignment of frequencies will be made in accordance with applicable loading criteria. Accordingly, depending upon the number of mobile units to be served, an applicant may either be required to share a channel, or, if an applicant shows a sufficient number of mobile units to warrant the assignment of one or more channels for its exclusive use, it may be licensed to use such channel or channels on an unshared basis in the area of operation specified in its application.

(i) Channels will be chosen and assigned in accordance with §§ 90.615, 90.617, or 90.619.

(ii) A mobile station is authorized to transmit on any frequency assigned to its associated base station.

(b) Stations authorized on frequencies listed in this subpart, except for those stations authorized pursuant to paragraph (g) of this section and EA-based and MTA-based SMR systems, will be afforded protection solely on the basis of fixed distance separation criteria. For Channel Blocks A, through V, as set forth in § 90.917(d), the separation between co-channel systems will be a minimum of 113 km (70 mi) with one exception. For incumbent licensees in Channel Blocks D through V, that have received the consent of all affected parties or a certified frequency coordinator to utilize an 18 dBµV/m signal strength interference contour (see § 90.693), the separation between co-channel systems will be a minimum of