

**Federal Communications Commission
Office of Engineering and Technology
Laboratory Division**

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**BACKGROUND BASED ON §§ 2.105 AND 2.106 AND OTHER FREQUENCY
LISTINGS CONSIDERATIONS**

I. INTRODUCTION

This document provides background information and other considerations about frequency listings on FCC Form 731 equipment authorization applications. However, § 2.106 and the radio service rules applicable for a device must be consulted to confirm actual frequencies routinely available for U.S. non-Federal operations and the associated equipment authorizations.

II. FREQUENCIES LISTED IN SERVICE RULES TAKE PRECEDENCE

[NOTE—This is paraphrase of § 2.105(e).] In the § 2.106 Table of Frequency Allocations, if a frequency or frequency band has been allocated to a radiocommunication service in the “Non-Federal Table” column, then a cross reference for the pertinent FCC rule part might be listed in the rightmost column of the § 2.106 table.

The FCC rule part(s) in the Non-Federal Table column are not allocations, and are provided for informational purposes only. The exact use that can be made of any given frequency or frequency band (e.g., channeling plans, allowable emissions, etc.) is determined by listings in the specific FCC Rule part(s).

III. BLANK IN RIGHT COLUMN OF THE § 2.106 TABLE MEANS FCC OPERATIONS NOT DEFINED

[NOTE—This is paraphrase of § 2.105(d)(1).] In the § 2.106 Table of Frequency Allocations, the frequency band referred to in each allocation is indicated in the left-hand top corner of the column. If there is no radio service or footnote indicated for a band of frequencies in the “Non-Federal Table” column, then the non-Federal sector (i.e., FCC licensing and equipment authorization) generally has no access to that band (except as provided for by § 2.102). Listing of that band on a Form 731 requires appropriate justifications within the application.

IV. EXAMPLES OF INDETERMINATE FORM 731 LINE ENTRIES

Table 1—Example unclear frequency and rule part listings

#	Example FCC-731A line-entry excerpts			Issues
1	<u>Grant Notes</u>	<u>FCC Rule Parts</u> 90	<u>Frequency Range (MHZ)</u> 136-144	2.106 does not list 90; 136-144 is not listed in 90.20(c)(3), 90.35(b)(3) available channels, nor elsewhere in 90.
2	<u>Grant Notes</u> EF	<u>FCC Rule Parts</u> 90	<u>Frequency Range (MHZ)</u> 136-144	EF note applies only when a span is contiguous with and extending into an adjacent 2.106 part 90 allocation, but next 90 above this is 150.8 MHz; remarks of 1 also apply.
3	<u>Grant Notes</u> EF	<u>FCC Rule Parts</u> 90	<u>Frequency Range (MHZ)</u> 809-849	824-849 is not listed in 90, thus per 2.105(e) it is not available and not to be listed for 90 operations; 824-849 falls in 22.905, with applicable technical rules defined in 22H.
4	<u>Grant Notes</u>	<u>FCC Rule Parts</u> 90	<u>Frequency Range (MHZ)</u> 450-470	Not allocated or licensable under 90 for all frequencies in the span; encompasses e.g., 95A and 95B with different technical rules, therefore needs split lines or EF note code and letter exhibit.

V. OTHER INFORMATION ON PART 90 PLRMS BANDS BELOW 960 MHZ

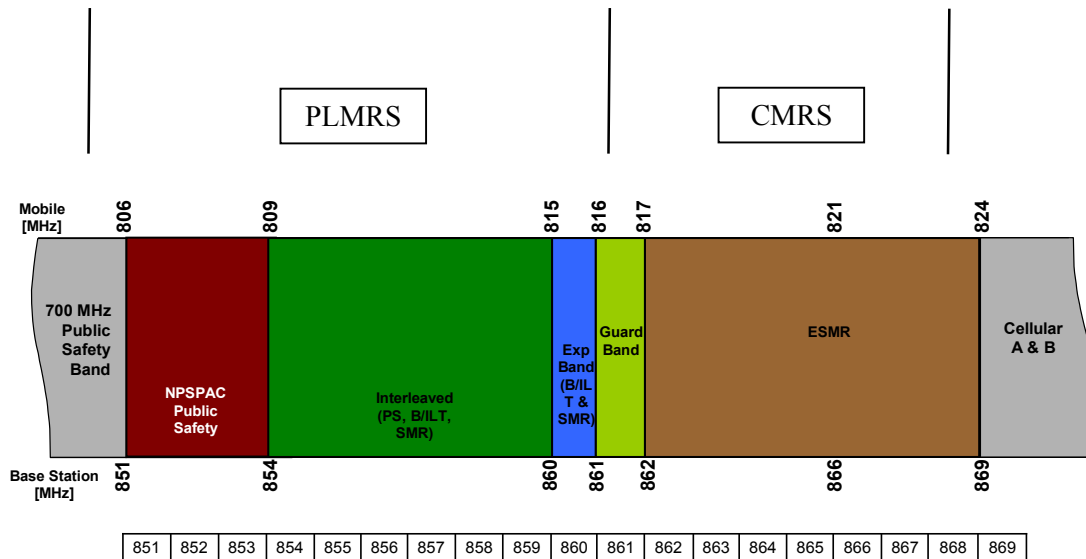
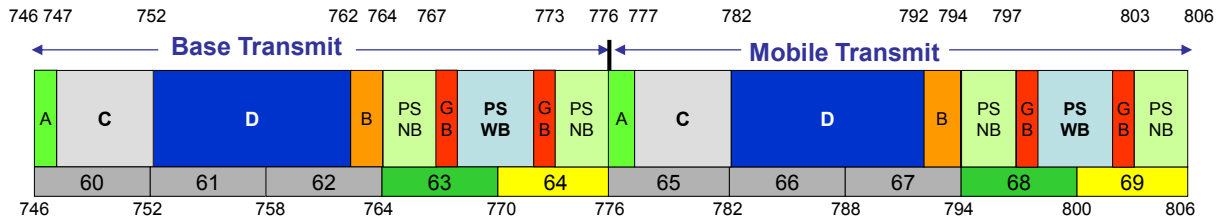
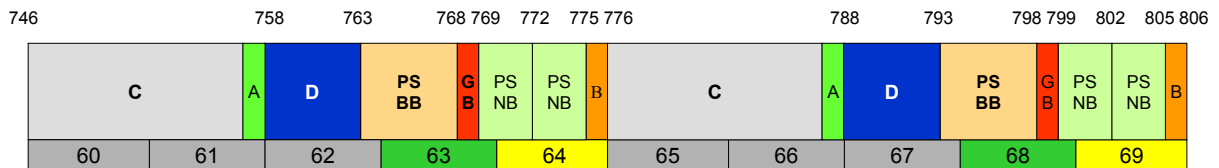


Figure 1—Standard U.S. 800 MHz Post Reconfiguration Band Plan (DA-08-1530)

FCC-98-191, etc. (obsolete; service rules not in CFR)



FCC-07-132 (obsolete; service rules not in CFR)



DA-12-1462 allocation; FCC-13-137 PS BB service rules

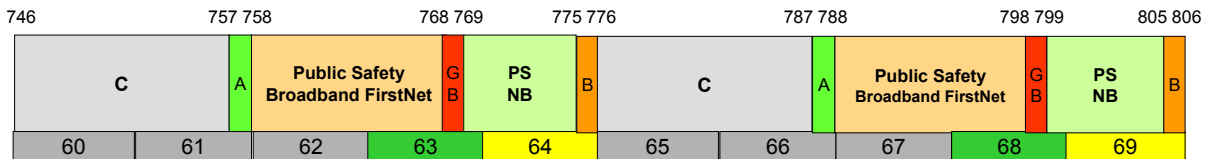


Figure 2—Upper 700 MHz part 90 PLMRS Public Safety and part 27 CMRS bandplan¹

¹ Repeated with slight modifications from “NPSTC Reviews Current Activities Nationwide Public Safety Broadband Network,” H. McEwen, *NPSTC Presents Public Safety Communications Current Events*, March 26, 2014; (<http://www.npstc.org/download.jsp?tableId=37&column=217&id=2991&file=IWCE%20Panel%20032614%20FINAL.ppt>).

Table 2—Summary of various Part 90 PLMRS band allocations, rule parts/sections, and service types (for info only – refer to rules for details)²

F _L (MHz)	–	F _H (MHz)	Rule(s)
150	–	150.05	Federal (non-FCC)
150.05	–	150.8	§ 90.265
150.8	–	162.0125	90
162.0125	–	173.2	§ 90.265
173.2	–	173.4	90
173.4	–	174	Federal (non-FCC)
406.1	–	420	§ 90.265
420	–	421	ULS presently shows no licensees for 420-420.9 MHz
421	–	430	90
430	–	450	Not available under 90 subparts B, C land mobile service
450	–	470	90 (selected bands)
470	–	512	90
746	–	757	27.5(b)(3) Block C; 90 not available
757	–	758	27.5(b)(1) Block A; 90 not available
758	–	768	90-R, Public Safety (PS) Broadband (FirstNet)
768	–	769	PS Guardband
769	–	775	PS Narrowband
775	–	776	27.5(b)(2) Block B; 90 not available
776	–	787	27.5(b)(3) Block C; 90 not available
787	–	788	27.5(b)(1) Block A; 90 not available
788	–	798	90-R, Public Safety (PS) Broadband (FirstNet)
798	–	799	PS Guardband
799	–	805	PS Narrowband
805	–	806	27.5(b)(2) Block B; 90 not available
806	–	809	90 NPSAP (PS) [§ 90.617(a)(1)]
809	–	815	90 Interleaved PS; B/ILT; SMR [§ 90.614(a); § 90.613 ch. nos. 1-470]
815	–	816	90 Expansion B/ILT; SMR [§ 90.614(a); § 90.613 ch. nos. 470-550]
816	–	817	90 Guardband
817	–	824	CMRS 90 ESMR [§ 90.614(b); § 90.613 ch. nos. 551-830]
824	–	849	22 H; 90 not available
849	–	851	22 G; 90 not available
851	–	854	90 NPSAP (PS) [§ 90.617(a)(1)]
854	–	860	90 Interleaved PS; B/ILT; SMR [§ 90.614(a); § 90.613 ch. nos. 1-470]
860	–	861	90 Expansion B/ILT; SMR [§ 90.614(a); § 90.613 ch. nos. 470-550]
861	–	862	90 Guardband
862	–	869	CMRS 90 ESMR [§ 90.614(b); § 90.613 ch. nos. 551-830]
869	–	894	22-H; 90 not available
894	–	896	22-G; 90 not available
896	–	901	90 Interleaved B/ILT [§ 90.617(c)] and SMR [§ 90.617(f)]; UL (donor)
901	–	902	24-D; 90 not available
928	–	929	101; 90 not available
929	–	930	22-E; § 90.493(c) allows part 90 for eqpt. auth., in lieu of part 22 ³
930	–	931	24-D; 90 not available
931	–	932	22-E; 90 not available
932	–	935	101; 90 not available
935	–	940	90 Interleaved B/ILT [§ 90.617(c)] and SMR [§ 90.617(f)]; DL (server)
940	–	941	24-D; 90 not available

² This Table 2 is repeated adapted from KDB Publication 935210 D02 v03; see also e.g., FCC WTB Wireless Services – Industrial/Business, (http://wireless.fcc.gov/services/index.htm?job=service_bandplan&id=industrial_business).

³ FCC Spectrum Dashboard, Browse Spectrum Bands (225 MHz - 3700 MHz) (<http://reboot.fcc.gov/spectrumdashboard/searchSpectrum.seam>): 928-929 MHz, 101; 929-930 MHz, 22 [see also (http://wireless.fcc.gov/services/index.htm?job=service_home&id=private_land_paging), (http://wireless.fcc.gov/services/index.htm?job=service_bandplan&id=paging)].

VI. SUMMARY OF § 2.106 BANDS AND RULES

Table 3—Summary of § 2.106 excerpt frequency and rule part listings

f lo MHz	f hi MHz	FCC Rule Part(s)
25.01	25.07	90
25.07	25.21	80 90
25.21	25.33	90
25.33	25.55	NA
25.55	25.67	NA
25.67	26.1	73 74D
26.1	26.175	74D 74H 80
26.175	26.48	74D 74H
26.48	26.95	NA
26.95	26.96	18
26.96	27.23	18 95
27.23	27.41	18 90 95
27.41	27.54	90
27.54	28	90
28	29.7	97
29.7	29.8	90
29.8	29.89	NA
29.89	29.91	NA
29.91	30	NA
30	30.56	NA
30.56	32	90
32	33	NA
33	34	90
34	35	NA
35	36	22 90
36	37	NA
37	37.5	90
37.5	38	90
38	38.25	NA
38.25	39	NA
39	40	90
40	42	18 90
42	43.69	22 90
43.69	46.6	90
46.6	47	NA
47	49.6	90
49.6	50	NA
50	54	97
54	72	73 74G 74H
72	73	22 87 90 95
73	74.6	NA
74.6	74.8	90
74.8	75.2	87
75.2	75.4	90
75.4	76	22 87 90 95
76	88	73 74G 74H
88	108	73 74L
108	117.975	87
117.975	121.9375	87

f lo MHz	f hi MHz	FCC Rule Part(s)
121.9375	123.0875	87
123.0875	123.5875	87
123.5875	128.8125	87
128.8125	132.0125	87
132.0125	136	87
136	137	87
137	137.025	25
137.025	137.175	25
137.175	137.825	25
137.825	138	25
138	144	NA
144	146	97
146	148	97
148	149.9	25
149.9	150.05	25
150.05	150.8	NA
150.8	152.855	22 90 95
152.855	154	74D 90
154	156.2475	80 90 95
156.2475	156.7625	80 87
156.7625	156.8375	80 87
156.8375	157.0375	80 87
157.0375	157.1875	80
157.1875	157.45	80 87 90
157.45	161.575	22 74D 80 90
161.575	161.625	22 80
161.625	161.775	22 74D 74H
161.775	161.9625	80 90
161.9625	161.9875	80
161.9875	162.0125	80
162.0125	162.0375	80
162.0375	173.2	74D 90
173.2	173.4	90
173.4	174	NA
174	216	73 74G 74H
216	219	80 90 95
219	220	80 90 97
220	222	90
222	225	97
225	235	NA
235	267	NA
267	322	NA
322	328.6	NA
328.6	335.4	87
335.4	399.9	NA
399.9	400.05	25
400.05	400.15	NA
400.15	401	25

f lo MHz	f hi MHz	FCC Rule Part(s)
401	402	95I
402	403	95
403	406	95I
406	406.1	80 87 95
406.1	410	90
410	420	90
420	450	90 95I 97
450	454	74D 74H 90 95I
454	455	22 80 95I
455	456	74D 74H 95I
456	460	22 80 90 95I
460	462.5375	90
462.5375	462.7375	95
462.7375	467.5375	80 90
467.5375	467.7375	80 95
467.7375	470	80 90
470	512	22 73 74G 74H 90
512	608	73 74G 74H
608	614	95
614	698	73 74G 74H
698	763	27 74G
763	775	90R
775	793	27 74G
793	805	90R
805	806	27 74G
806	809	90
809	849	22 90
849	851	22
851	854	90
854	894	22 90
894	896	22
896	901	90
901	902	24
902	928	18 90 97
928	929	22 90 101
929	930	90
930	931	24
931	932	22
932	935	22 101
935	940	90
940	941	24
941	944	22 74E 101
944	960	22 74E 74H 101

NOTE—Table 3 is based on FCC Online Table, version dated 4/13/2013; the latest active version must be used at the time of an equipment application filing, given at: (<http://www.fcc.gov/encyclopedia/radio-spectrum-allocation>).

Change Notice

10/10/2014 Appendix A from D01 Freq Range Listing for Grants v03 is relocated and updated to be the initial D02 Freq Range Listing Background v01; updates include the following.

- Figures 1 and 2 and Table 2 are added, for additional guidance about allocated and licensable part 90 frequencies.

12/18/2015 D02 Freq Range Listing Background v01 is updated and replaced by D02 Freq Range Listing Background v01r01; updates include the following.

- Heading of Table 3 in VI) is corrected.
- Updated Table 2 for consistency with latest 935210 D02.