

Classes of US FM Radio Stations

The following tables represent a general guide to the classes of FM radio stations as described in the FCC 80-90 docket. For a specific application and equipment requirement, contact ERI or a consulting broadcast engineer.

Class A (3 kW)-328*

LPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
1	7.6 kW	3 kW	1 5/8"	336'
2	3.7 kW	3 kW	1 5/8"	341'
3	2.4 kW	3 kW	1 5/8"	346'

Class A (6 kW)-328*

LPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
3	4.8 kW	6 kW	1 5/8"	346'
4	3.5 kW	6 kW	1 5/8"	351'
6	2.2 kW	6 kW	1 5/8"	361'

Class B1 or C3-328*

SHPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
4	13.0 kW	25 kW	3"	351'
5	10.3 kW	25 kW	3"	356'
6	8.4 kW	25 kW	3"	361'
7	7.1 kW	25 kW	3"	366'
8	6.2 kW	25 kW	3"	371'

Class B or C2 FM-492*

SHPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
5	21.7 kW	50 kW	3"	520'
6	17.8 kW	50 kW	3"	525'
7	15.1 kW	50 kW	3"	530'
8	13.0 kW	50 kW	3"	535'
9	11.6 kW	50 kW	3"	540'
10	10.4 kW	50 kW	3"	545'

Class C1 FM-984*

SHPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
6	39.1 kW	100 kW	3 1/8"***	1017'
8	28.8 kW	100 kW	3 1/8"	1027'
10	24.5 kW	100 kW	3"	1037'
12	20.2 kW	100 kW	3"	1047'

Class C FM-1968*

SHPX Antenna Bays Required	Transmitter Output Power**	Effective Radiated Power **	Coax Line Size	Tower Height **
6	51.4 kW	100 kW	4"	2001'
8	37.8 kW	100 kW	4"	2011'
10	29.2 kW	100 kW	3 1/8"***	2021'
12	20.2 kW	100 kW	3"	2031'

* One suggested antenna/transmitter combination. Other combinations are possible and may be desirable.

** Depicts maximum ERP (effective radiated power) at maximum height allowed.

*** Rigid Line

Antenna Gain Calculations

AG = Required Minimum Antenna Gain in dB

AG = 10 log (Published Antenna Power Gain)

ERP = Effective Radiated Power in dBw

ERP = 10 log (Effective Radiated Power in Watts)

L = Transmission Line Loss in dB and any filter or other device loss in dB

TPO = Transmitter Power Out in dBw TPO = 10 log (Transmitter Power Out in Watts)

AG = ERP - TPO + L

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Chandler, Indiana USA 47610
Document 0101020A (2004-05-27)
Printed in USA