

RVRUSA - DATA DE REFERENCIA PARA INGENIEROS

**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	50 kW	3"	520'
6	17.8	50 kW	3"	525'
7	15.1	50 kW	3"	530'

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8	13	50 kW	3"	535'
9	11.6	50 kW	3"	540'
10	10.4	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	100 kW	4"	2001'
8	37.8	100 kW	4"	2011'
10	29.2	100 kW	3 1/8"***	2021'
12	20.2	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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