

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' |
| 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' |
| <p>* 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</p> | | | | |
| <p>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</p> | | | | |
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