

| Description of emission   | Necessary bandwidth   |  | Designation of emission |
|---|---|--|-------------------------|
|   | Formula   | Sample calculation   |                         |
| Composite transmission digital modulation using DSB-AM (Micro-wave radio relay system). | $B_n = 2RK/\log_2 S$  | Digital modulation used to send 5 megabits per second by use of amplitude modulation of the main carrier with 4 signaling states<br>$R = 5 \times 10^6$ bits per second; $K = 1$ ; $S = 4$ ; $B_n = 5$ MHz                             | 5M00K7                  |
| Binary Frequency Shift Keying.  | $(0.03 < 2D/R < 1.0)$ ;<br>$B_n = 3.86D + 0.27R$<br>$(1.0 < 2D/R < 2)$<br>$B_n = 2.4D + 1.0R$ | Digital modulation used to send 1 megabit per second by frequency shift keying with 2 signaling states and 0.75 MHz peak deviation of the carrier<br>$R = 1 \times 10^6$ bps; $D = 0.75 \times 10^6$ Hz; $B_n = 2.8$ MHz               | 2M80F1D                 |
| Multilevel Frequency Shift Keying.  | $B_n = (R/\log_2 S) + 2DK$  | Digital modulation to send 10 megabits per second by use of frequency shift keying with four signaling states and 2 MHz peak deviation of the main carrier<br>$R = 10 \times 10^6$ bps; $D = 2$ MHz; $K = 1$ ; $S = 4$ ; $B_n = 9$ MHz | 9M00F7D                 |
| Phase Shift Keying .....  | $B_n = 2RK/\log_2 S$  | Digital modulation used to send 10 megabits per second by use of phase shift keying with 4 signaling states<br>$R = 10 \times 10^6$ bps; $K = 1$ ; $S = 4$ ; $B_n = 10$ MHz  | 10M0G7D                 |
| Quadrature Amplitude Modulation (QAM).  | $B_n = 2R/\log_2 S$   | 64 QAM used to send 135 Mbps has the same necessary bandwidth as 64-PSK used to send 135 Mbps;<br>$R = 135 \times 10^6$ bps; $S = 64$ ; $B_n = 45$ MHz   | 45M0W                   |
| Minimum Shift Keying ...  | 2-ary:<br>$B_n = R(1.18)$<br>4-ary:<br>$B_n = R(2.34)$  | Digital modulation used to send 2 megabits per second using 2-ary minimum shift keying<br>$R = 2.36 \times 10^6$ bps; $B_n = 2.36$ MHz   | 2M36G1D                 |

[28 FR 12465, Nov. 22, 1963, as amended at 37 FR 8883, May 2, 1972; 37 FR 9996, May 18, 1972; 48 FR 16492, Apr. 18, 1983; 49 FR 48698, Dec. 14, 1984; 68 FR 68543, Dec. 9, 2003]

**Subpart D—Call Signs and Other Forms of Identifying Radio Transmissions**

**AUTHORITY:** Secs. 4, 5, 303, 48 Stat., as amended, 1066, 1068, 1082; 47 U.S.C. 154, 155, 303.

**§2.301 Station identification requirement.**

Each station using radio frequencies shall identify its transmissions according to the procedures prescribed by the rules governing the class of station to which it belongs with a view to the elimination of harmful interference and the general enforcement of applicable radio treaties, conventions, regulations, arrangements, and agreements in force, and the enforcement of the Communications Act of 1934, as amended, and the Commission's rules.

[34 FR 5104, Mar. 12, 1969]

**§2.302 Call signs.**

The table which follows indicates the composition and blocks of international call signs available for assignment when such call signs are required by the rules pertaining to particular classes of stations. When stations operating in two or more classes are authorized to the same licensee for the same location, the Commission may elect to assign a separate call sign to each station in a different class. (In addition to the U.S. call sign allocations listed below, call sign blocks AAA through AEZ and ALA through ALZ have been assigned to the Department of the Army; call sign block AFA through AKZ has been assigned to the Department of the Air Force; and call sign block NAA through NZZ has been assigned jointly to the Department of the Navy and the U.S. Coast. Guard.

| Class of station                                      | Composition of call sign | Call sign blocks                     |
|---|--------------------------|--------------------------------------|
| Coast (Class I) except for coast telephone in Alaska. | 3 letters .....          | KAA through KZZ.<br>WAA through WZZ. |