Emission Designators

Emissions are designated according to their classification and their necessary bandwidth. A minimum of three symbols is used to describe the basic characteristics of radio waves. Emissions are classified and symbolized according to the following characteristics (which are also available online at **fccid.io/Emissions-Designator**):

I. First symbol—Type of modulation of the main carrier
II. Second symbol—Nature of signal(s) modulating the main carrier
III. Third symbol—Type of information to be transmitted
Note: A fourth and fifth symbol are provided for in the ITU Radio Regulations. Use of the fourth and fifth symbol is optional.
IV. Details of signal(s)
V. Nature of multiplexing

First symbol—type of modulation of the main carrier

(1) Emission of an unmodulated carrier.....N
(2) Emission in which the main carrier is amplitude-modulated (including cases where subcarriers are angle-modulated):
- Double sideband.....A
- Single sideband, full carrier.....H
- Single sideband, reduced or variable level carrier.....R
- Single sideband, suppressed carrier.....J
- Independent sidebands.....B
- Vestigial sideband.....C

(3) Emission in which the main carrier is angle-modulated:
- Frequency modulation.....F
- Phase modulation.....G

Note: Whenever frequency modulation (F) is indicated, phase modulation (G) is also acceptable.

(4) Emission in which the main carrier is amplitude and angle-modulated either simultaneously or in a pre-established sequence.....D
(5) Emission of pulses[1]
- Sequence of unmodulated pulses.....P
- A sequence of pulses:
- Modulated in amplitude.....K
- Modulated in width/duration.....L
- Modulated in position/phase.....M
- In which the carrier is angle-modulated during the period of the pulse.....Q
- Which is a combination of the foregoing or in produced by other means.....V

(6) Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence in a combination of two or more of the following modes: amplitude, angle, pulse.....W
(7) Cases not otherwise covered.....X

Second symbol—nature of signal(s) modulating the main carrier

(1) No modulating signal.....0
(2) A single channel containing quantized or digital information without the use of a modulating subcarrier, excluding time-division multiplex.....1
(3) A single channel containing quantized or digital information with the use of a modulating subcarrier, excluding time-division multiplex.....2
(4) A single channel containing analog information.....3
(5) Two or more channels containing quantized or digital information.....7
(6) Two or more channels containing analog information.....8
(7) Composite system with one or more channel containing quantized or digital information, together with one or more channels containing analog information.....9
(8) Cases not otherwise covered.....X

Third symbol—type of information to be transmitted[2]

(1) No information transmitted.....N
(2) Telegraphy, for aural reception.....A
(3) Telegraphy, for automatic reception.....B
(4) Facsimile.....C
(5) Data transmission, telemetry, telecommand.....D
(6) Telephony (including sound broadcasting).....E
(7) Television (video).....F
(8) Combination of the above.....W
(9) Cases not otherwise covered.....X

Where the fourth or fifth symbol is used it shall be used as indicated below. Where the fourth or the fifth symbol is not used this should be indicated by a dash where each symbol would otherwise appear.

Fourth symbol—Details of signal(s)

(1) Two-condition code with elements of differing numbers and/or durations.....A
(2) Two-condition code with elements of the same number and duration without error-correction.....B
(3) Two-condition code with elements of the same number and duration with error-correction.....C
(4) Four-condition code in which each condition represents a signal element (of one or more bits).....D
(5) Multi-condition code in which each condition represents a signal element (of one or more bits).....E
(6) Multi-condition code in which each condition or combination of conditions represents a character.....F
(7) Sound of broadcasting quality (monophonic).....G
(8) Sound of broadcasting quality (stereophonic or quadraphonic).....H
(9) Sound of commercial quality (excluding categories given in (10) and (11) below.....J
(10) Sound of commercial quality with frequency inversion or band-splitting.....K
(11) Sound of commercial quality with separate frequency-modulated signals to control the level of demodulated signal.....L
(12) Monochrome.....M
(13) Color.....N
(14) Combination of the above.....W
(15) Cases not otherwise covered.....X

Fifth symbol—Nature of multiplexing

(1) None.....N
(2) Code-division multiplex[3].....C
(3) Frequency-division multiplex.....F
(4) Time-division multiplex.....T
(5) Combination of frequency-division and time-division multiplex.....W
(6) Other types of multiplexing.....X

[1] Emissions where the main carrier is directly modulated by a signal which has been coded into quantized form (eg, pulse code modulation) should be designated under (2) or (3).
[2] In this context the word "information" does not include information of a constant unvarying nature such as is provided by standard frequency emissions, continuous wave and pulse radars, etc.
[3] This includes bandwidth expansion techniques.