OfW84 - Guide to class of emissions

Introduction

Emissions are designated according to their necessary bandwidth and modulation and are coded internationally using seven characters for their basic parameters and two optional characters for further details of the signal. Modulation used only for short periods and for incidental purposes (such as for identification or calling) may be ignored.

Necessary Bandwidth

The necessary bandwidth is expressed by three numerals and one letter. The letter occupies the position of the decimal point and represents the unit of bandwidth, eg Hz, kHz, MHz.

For example, the necessary bandwidth codes use the following letters:

From 0.001 to 999 Hz =H
From 1.00 to 999 kHz = K
From 1.00 to 999 MHz = M
From 1.00 to 999 GHz = G

Note: The first character shall be neither zero nor K, M or G.

1Hz	=	1H00
25.33Hz	=	25H3
400Hz	=	400H
2.4kHz	=	2K40
6kHz	=	6K00
12.5kHz	=	12K5
180.4kHz	=	180K
180.5kHz	=	181K
180.7kHz	=	181K
1.25MHz	=	1M25
2MHz	=	2M00
10MHz	=	10M0
202MHz	=	202M
5.65GHz	=	5G65

Note: Carrier only is expressed as 1H00

Class of emission

The basic characteristics are:-

First character: type of modulation of the main carrier

Second character: nature of signal(s) modulating the main carrier

Third character: type of information to be transmitted

First character

Please use the following characters to identify type of modulation.

N	Emission of unmodulated carrier.

Types of emissions in which the main carrier is amplitude modulated

Including cases where sub carriers are angle modulated.

A	Double sideband.
H	Single sideband, full carrier.
R	Single sideband, reduced or variable level carrier.
J	Single sideband, suppressed carrier.
B	Independent sidebands.
C	Vestigial sideband.

Types of emission in which the main carrier is angle modulated

F	Frequency modulation.
G	Phase modulation.
D	Emission in which the main carrier is amplitude and angle modulated either simultaneously or in a pre-established sequence.

Emission of pulses

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 the sections above.

P	Sequence of unmodulated pulses.

A sequence of pulses

K	Modulated in amplitude.
L	Modulated in width/duration.
M	Modulated in position/phase.
Q	In which the carrier is angle modulated during the period of the pulse.
V	Which is a combination of the foregoing or is produced by other means.
W	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.
X	Cases not otherwise covered.

Second character

0	No modulating signal.
1	A single channel containing quantized or digital information without the use of a modulating sub-carrier. This excludes time-division multiplex.
2	A single channel containing quantized or digital information with the use of a modulating sub-carrier. This excludes time division multiplex.
3	A single channel containing analogue information.
7	Two or more channels containing quantized or digital information.
8	Two or more channels containing analogue information.

9	Composite system with one or more channels containing analogue quantized or digital information, together with one or more channels containing analogue information.
X	Cases not otherwise covered.

Third character

Note: The term "Information" does not represent a signal of a constant unvarying nature, as provided by standard frequency emissions, continuous wave and pulse radars, etc.

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

Description of emission (optional)

These are:

fourth character: details of signal(s)

fifth character: nature of multiplexing

Where the fourth or fifth characters are not used please indicate on the form by a (-) where each character would otherwise appear.

Fourth character

A	Two-condition code with elements of differing numbers and/or durations.
B	Two-condition code without elements of the same number and duration with error-correction.
C	Two-condition code with elements of the same number and duration with error-correction.
D	Four-condition code in which each condition represents a signal element (of one or more bits).
E	Multi-condition code in which each condition represents a signal element (of one or more bits).
F	Multi-condition code in which each condition or combination of conditions represents a character.
G	Sound of broadcasting quality (monophonic).
H	Sound of broadcasting quality (stereophonic or quadrophonic).
J	Sound of commercial quality (excluding categories given in K and L below).
K	Sound of commercial quality with the use of frequency inversion or band-splitting.
L	Sound of commercial quality with separate frequency-modulated signals to control the level of demodulated signal.
M	Monochrome television (video only).
N	Colour television (video only).
W	Combination of the above.
X	Cases not otherwise covered.

Fifth character

N	No multiplexing employed.
C	Code division multiplex. (This includes bandwidth expansion techniques).
F	Frequency-division multiplex.
T	Time-division multiplex.
W	Combination of frequency-division multiplex and time-division multiplex.
X	Other types of multiplexing.

Definitions in this note are based on the Radio Regulations published by the International Telecommunications Union, 1998.