EMISSION DESIGNATORS

1. Emission designators. Emissions are described according to their characteristics and necessary bandwidth. These components consist of:

a. Characteristics.

(1) Basic characteristics. The basic characteristics of a radio emission are described by three symbols. These are:

First symbol - the type of modulation of the main carrier.
Second symbol - the nature of the signal(s) modulating the main carrier.
Third symbol - the type of information to be transmitted.

(2) Optional additional characteristics. For a more complete description of an emission, two optional characteristics may be added. These are:

Fourth symbol - details of signal(s).
Fifth symbol - nature of multiplexing.

(3) Details of the characteristics component of emission designators are shown on Page 2C.3.

b. Necessary Bandwidth.

(1) 'Necessary Bandwidth' is internationally defined as 'For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions'. It is expressed as three numerals and one letter occupying the position of the decimal point. The letters used are H for Hertz, K for Kilohertz, M for Megahertz and G for Gigahertz.

(2) In order to avoid a bandwidth being expressed in more than one way, the first character of the bandwidth is not to be O, K, M or G. Additionally, frequencies between:

0.001 and 999 Hz to be expressed in Hz (letter H).
1.00 and 999 kHz are to be expressed in kHz (letter k).
1.00 and 999 MHz are to be expressed in MHz (letter M).
1.00 and 999 GHz are to be expressed in GHz (letter G).

(3) Example of the new method of expressing necessary bandwidth are as follows:

Bandwidth		Expression	Bandwidth		Expression
0.002	Hz	H002	180.5	kHz	181K
0.1	Hz	H100	180.7	kHz	181K
25.3	Hz	25H3	1.25	MHz	1M25
400	Hz	400H	2	MHz	2M00
2.4	kHz	2K40	10	MHz	10M0
6	kHz	6K00	16.32	MHz	16M3
12.5	kHz	12K5	202	MHz	202M
180.4	kHz	180K	5.65	GHz	5G65

2. Examples of emission designators are shown on Page 2C.6. The use of the basic characteristics (Paragraph 1a(1)) will be adequate for most purposes. When the full emission designator is used the bandwidth expression is to precede the characteristics component.

EMISSION DESIGNATORS - CHARACTERISTICS COMPONENT

(Internationally in use from 1 Jan 82)

First symbol (mandatory). Main carrier modulation

Emission of an unmodulated carrier.	N
Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers 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 sideband	B
Vestigial sideband	C
Emission in which the main carrier is angle-modulated.	
Frequency modulation	F
Phase modulation	G
Emission in which the main carrier is amplitude - and angle-modulated either simultaneously or in a pre-established sequence.	D
Emission of pulses.	
Unmodulated sequence of 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 is produced by other means	V
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
Cases not otherwise covered.	X

Second symbol (mandatory). Nature of modulating signals

No modulating signal.	0
A single-channel containing quantized or digital information without the use of a modulating sub-carrier.	1
A single-channel containing quantized or digital information with the use of a modulating sub-carrier.	2

A single-channel containing analogue information.	3
Two or more channels containing quantized or digital information.	7
Two or more channels containing analogue information.	8
Composite system with one or more channels containing quantized or digital information together with one or more channels containing analogue information.	9
Cases not otherwise covered.	X

Third symbol (mandatory). Type of information transmitted

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

Fourth symbol (optional). Details of signals

Two-condition code of differing numbers and durations of elements.	A
Two-condition code with elements of the same number and duration without error correction.	B
Two-condition code with elements of the same number and duration with error correction.	C
Four-condition code in which each condition represents a signal element.	D
Multi-condition code in which each condition represents a signal element.	E
Multi-condition code in which each condition represents a character.	F

Sound of broadcasting quality (monophonic).	G
Sound of broadcasting quality (stereophonic or quadraphonic).	H
Sound of commercial quality.	J
Sound of commercial quality with frequency inversion or band-splitting.	K
Sound of commercial quality with separate FM signals to control the level of demodulated signal.	L
Monochrome.	M
Colour.	N
Combination of the above.	W
Cases not covered.	X

Fifth symbol (optional). Nature of multiplexing

None.	N
Code division multiplex.	C
Frequency division multiplex.	F
Time division multiplex.	T
Combination of frequency and time division multiplex.	W
Other types of multiplexing.	X

EXAMPLES OF EMISSION DESIGNATORS

Emission	Full Emission Designator	Abbreviated Emission Designator
Amplitude modulation		
Beacon - continuous wave	100HN0N—	NON
Morse - carrier keyed	100HA1AAN	AIA
Morse - tone keyed	100HJ2AAN	J2A
DSB - RATT	850HA2BBN	A2B
DSB telephony - commercial quality	6K00A3EJN	A3E
SSB (SC) facsimile - with error corrector	3K00J3CCN	J3C
SSB (Full Carrier) telephony	3K00H3E—	H3E
SSB (SC) single-channel RATT - without error correction	1K34J2BBN	J2B
SSB (SC) multi-channel with error correction and frequency division multiplex	2K89J7BCF	J7B
SSB (SC) RATT (Link 10)	2K20J2DBN	J2D
Quadrature modulation (Link 11)	3K05B2DBN	B2D
ISB - voice/voice	6K00B8E—	B8E
ISB - voice/RATT	4K34B9W—	B9W
ISB - RATT/CW	1K85B7W—	B7W
ISB - RATT/RATT	1K70B7B—	B7B
Frequency modulation		
Single-channel RATT	304HF2BBN	F2B
Facsimile - analogue	1K98F3C—	F3C
Multi-channel RATT	1K42F7BBF	F7B
Voice	12K5F3E—	F3E