

Glossary of

Electrotechnical, power, telecommunication, electronics, lighting and colour terms —

Part 3: Terms particular to
telecommunications and electronics —

Group 07: Radiocommunication
terminology

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Association of Mining Electrical and	Institution of Electronic and Radio Engineers*
Mechanical Engineers	Institution of Production Engineers
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in England and Wales*	Manufacturing Association*
Electronic Engineering Association*	

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Institute of Physics and the Physical Society	Telephone Manufacturers' Technical
Radio and Electronics Technical Press	Development Committee

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Contents

	Page
Co-operating organizations	Inside front cover
Foreword	ii
Guide to the glossary	iv
307 1 General	1
307 11 Radiocommunication terms	1
307 12 Electromagnetic waves. Classification of radio waves	2
307 13 Carrier modulation	3
307 14 Noise and interference	4
307 2 Aerials	4
307 21 Aerials, elements and components	4
307 22 Aerials, electrical characteristics and directivity	6
307 23 Types of aerial	10
307 24 Microwave aerials	14
307 3 Transmitting and receiving equipment	16
307 31 Designation of emissions	16
307 32 Radio transmitters	17
307 33 Reception and radio receivers	21
307 4 Radio telegraphy	24
Alphabetical index	25

Foreword

This Group of Part 3 of this British Standard Glossary, prepared under the authority of the Electrical Industry Standards Committee and the Telecommunication Industry Standards Committee, contains terms and definitions relating to radiocommunication and supersedes the following sections and subsection of BS 204¹⁾:

- *Section 4: Radio terminal equipment;*
- *Section 6: Classification of radio waves and transmissions;*
- *Subsection 76: Mobile radio.*

The terms and definitions are in close agreement with the corresponding terms in the latest edition of the International Electrotechnical Vocabulary prepared by the International Electrotechnical Commission (IEC).

In this new glossary a number of significant changes have been introduced. It has been decided to combine into one glossary the subjects previously covered by BS 204, BS 205²⁾, BS 233³⁾ and BS 1611⁴⁾ glossaries. The glossary is divided into four main Parts, each of which is further subdivided into groups. Each group will comprise the terms and definitions used in a particular branch of electrical engineering and will be issued individually as soon as it is completed. This arrangement makes it possible to add new groups, or revise existing groups, at any time without affecting the remainder of the glossary.

The four main Parts of the glossary are as follows:

- *Part 1: Terms common to power, telecommunications and electronics;*
- *Part 2: Terms particular to power engineering;*
- *Part 3: Terms particular to telecommunications and electronics;*
- *Part 4: Terms particular to lighting and colour.*

As groups of terms within the new framework are published, the corresponding parts of the British Standard glossaries mentioned above will be withdrawn. Ultimately the new glossary will replace these standards completely and they will then be withdrawn.

Fundamental and general terms common to power, telecommunications and electronics, respectively form the first two groups of Part 1. General terms particular to Part 2 and Part 3 similarly form the first groups of their respective Parts. The specialist groups contain only the terms and definitions relating to their subject.

As far as has been practicable all terms and definitions established in current usage and falling within the scope of this glossary have been included. Experience has shown that it is rarely possible to replace, or even to modify, a well established term no matter what the logical or aesthetic shortcomings of that term may be. Current usage has therefore been accepted as the authority for terms and their meanings except where there has been a very good reason for doing otherwise, as, for example, where terms have been considered to be fundamentally wrong, ambiguous, superfluous or in need of standardization. Where two or more synonymous terms are in use those which are deprecated are omitted from the body of the text but are entered in the alphabetical index with a cross reference to the standard term. In cases where it was felt that the time was not yet right to deprecate a synonym, preferred terms are given first and other terms are printed in less prominent type to indicate the intention to deprecate them in the course of time. Where synonyms are considered of equal value they are shown in the same type.

¹⁾ BS 204, "Glossary of terms used in telecommunication (including radio) and electronics".

²⁾ BS 205, "Glossary of terms used in electrical engineering".

³⁾ BS 233, "Glossary of terms used in illumination and photometry".

⁴⁾ BS 1611, "Glossary of colour terms used in science and industry".

Where terms are used with somewhat different meanings in different branches of electrical engineering, appropriate definitions are given in the groups of the glossary corresponding to these branches. Such a definition when taken out of the context of its group should always be quoted with a preamble indicating its proper context.

It is to be noted that the given definition of a term represents the generally accepted meaning of that term. Under no circumstances should it be regarded as taking the place of a specification.

An effort has been made to arrange the terms in a logical order proceeding from the general to the specific and from the whole to the part and placing allied terms in proximity within a subsection or section of the group. Each term has assigned to it a Part number (one digit) and a Group number of two digits followed by a space and four digits, the first digit of which represents the section, the second digit the subsection and the last two digits the place within the subsection.

A general view of the arrangement of the group in the glossary can be obtained from the Guide to the Glossary. An alphabetical index of the terms of the group is provided at the end to facilitate reference to particular terms. For simplicity, only the last four digits of a term's number are quoted in the index. It is recommended that the user of any group of the glossary should consider the group in association with the groups covering general or fundamental terms within the Part, for Parts 2 and 3, and also together with Groups 01 and 02 of Part 1.

In this glossary round brackets () enclose words or phrases which are not part of the term or definition and can be omitted without affecting the meaning.

Square brackets [] enclose words which may replace a preceding part of an expression. The limiting sign $\sqsubset$ indicates, if necessary, how many of the preceding words are replaced.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 28 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Guide to the glossary

Part 1: Terms common to power, telecommunications and electronics

- Group 01. Fundamental concepts
- Group 02. General technological terminology
- Group 03. Relay terminology
- Group . Measurement terminology^a
- Group . Semiconductor terminology^a
- Group . Electronic tube terminology^a
- Group . Magnetism terminology^a
- Group . Radiological terminology^a
- Group . Radio interference terminology^a
- Group . Integrated electronic circuit terminology^a

Titles to any further groups will be added in due course.

Part 2: Terms particular to power engineering

- Group 01. General power terminology
- Group 02. Static convertor terminology
- Group 03. Rotating machinery terminology
- Group 04. Transformer terminology^a
- Group 05. Voltage fluctuation terminology^a
- Group . Power switchgear terminology^a
- Group . Power systems terminology^a
- Group . Systems operation terminology^a
- Group . Traction terminology^a
- Group . Tariffs terminology^a

Titles to any further groups will be added in due course.

Part 3: Terms particular to telecommunications and electronics

- Group 01. General telecommunication and electronics terminology
- Group 02. Telephony terminology
- Group 03. Telegraphy, including facsimile, terminology
- Group 04. Broadcasting, radio and television terminology
- Group 05. Propagation and media terminology
- Group 06. Radio location and navigation terminology
- Group 07. Radiocommunication terminology**

Titles to any further groups will be added in due course.

Part 4: Terms particular to lighting and colour

- Group 01. Radiation and photometry terminology
- Group 02. Vision and colour terminology
- Group 03. Lighting technology terminology^a

^a Not yet published, as at August, 1971.

307 1 General

No.	Term	Definition
307 11	<i>Radiocommunication terms</i>	
307 1101	radio	A general term applied to the use of radio waves.
307 1102	radiocommunication	Telecommunication by means of radio waves.
307 1103	radiotelephony	Telephony by means of radio waves.
307 1104	radiotelegraphy	Telegraphy by means of radio waves.
307 1105	broadcasting service	A radio communication service in which the transmissions are intended for direct reception by the general public. This service may include sound transmission, television transmission, or other types of transmission.
307 1106	radio broadcasting	Transmissions by radio of a programme for general reception.
307 1107	radio link	A radiocommunication system forming part of a telecommunication circuit.
307 1108	radio channel	A channel provided by means of a radio transmitter and a radio receiver.
307 1109	radio-relay system	A radio circuit comprising terminal stations connected by intermediate radio-relay stations.
307 1110	radio-relay station	A radio station receiving and re-transmitting radio signals carrying the same information.
307 1111	wideband radio-relay system	A system of transmitting by means of radio, normally via one or more intermediate stations, a band of frequencies which can accommodate the transmission of one or more super-groups of telephony, or one or more television signals, or combinations of these or any other type of signal requiring bandwidths of this order.
307 1112	radiotelemetry; radiotelemetering	The use of radiocommunication for automatically indicating or recording measurements at a distance from the measuring instrument.
307 1113	single-frequency operation	A radio system in which the transmitted frequency is the same for both directions of transmission.
307 1114	two-frequency operation	A radio system in which the transmitted frequency is different for the two directions of transmission.
307 1115	reversed-frequency operation	A method of operation of a two frequency system in which one station communicates with other stations by relaying through the base station, the frequency allocation for transmitting and receiving at the first mentioned station being the reverse of the allocation at the base station, i.e. the same as at each of the other stations.
307 1116	talk-through facility	An arrangement of a two-frequency system whereby radio stations communicate with one another via a base station or a third station.
307 1117	selective calling	A system whereby the transmission of a signal code from a station enables another predetermined station or group of stations to be called exclusively.

No.	Term	Definition
307 1118	spaced-carrier operation	A method of operation whereby two or more separated stations transmit (and receive) the same signals simultaneously on two or more carrier frequencies spaced by a small frequency interval, in order to extend the area effectively covered by the service.
307 1119	simplex operation	The method of operation whereby transmission is made possible alternately in each direction, for example, by means of manual control. NOTE Simplex operation may use either one or two frequencies in radiocommunication.
307 1120	duplex operation	A method of operation whereby transmission is possible simultaneously in both directions. NOTE Duplex operation requires two frequencies in radiocommunication.
307 12	<i>Electromagnetic waves. Classification of radio waves</i>	
307 1201	radiation	<i>In radio.</i> 1. The outward flow of radio frequency energy from a source. 2. Energy flowing in a medium in the form of radio waves.
307 1202	hertzian waves	Electromagnetic waves having frequencies below those of infra-red waves.
307 1203	radio waves	Electromagnetic waves arbitrarily restricted to frequencies below 3 000 GHz (3 000 Gc/s) and not guided between transmitter and receiver by artificial boundaries such as wires or waveguides.
307 1204	classification of radio frequencies and wavelengths	The radio spectrum is subdivided into nine frequency bands designated by progressive whole numbers in accordance with the following table. Frequencies should be expressed as follows: in kilohertz, kHz (kc/s) up to and including 3 000 kHz (kc/s); in megahertz, MHz (Mc/s) thereafter up to and including 3 000 MHz (Mc/s); in gigahertz, GHz (Gc/s) thereafter up to and including 3 000 GHz (Gc/s). However, where adherence to these provisions would introduce serious difficulties, for example in connection with the notification and registration of frequencies, the lists of frequencies and related matters, reasonable departures may be made.

No.	Term	Definition																														
		<table border="1"> <thead> <tr> <th>Band number</th><th>Frequency range (lower limit exclusive, upper limit inclusive)</th><th>Corresponding metric subdivision</th></tr> </thead> <tbody> <tr><td>4</td><td>3– 30 kHz</td><td>Myriametric waves</td></tr> <tr><td>5</td><td>30– 300 kHz</td><td>Kilometric waves</td></tr> <tr><td>6</td><td>300–3 000 kHz</td><td>Hectometric waves</td></tr> <tr><td>7</td><td>3– 30 MHz</td><td>Decametric waves</td></tr> <tr><td>8</td><td>30– 300 MHz</td><td>Metric waves</td></tr> <tr><td>9</td><td>300–3 000 MHz</td><td>Decimetric waves</td></tr> <tr><td>10</td><td>3– 30 GHz</td><td>Centimetric waves</td></tr> <tr><td>11</td><td>30– 300 GHz</td><td>Millimetric waves</td></tr> <tr><td>12</td><td>300–3 000 GHz 3 THz</td><td>Decimillimetric waves</td></tr> </tbody> </table> NOTE 1 “Band N” extends from 0.3×10^N Hz to 3×10^N Hz. NOTE 2 Abbreviations: Hz = hertz, (1 Hz = 1 cycle per second), k = kilo (10^3), M = mega (10^6), G = giga (10^9), T = tera (10^{12}). NOTE 3 Abbreviations for adjectival band designations: Band 4 = VLF Band 8 = VHF Band 5 = LF Band 9 = UHF Band 6 = MF Band 10 = SHF Band 7 = HF Band 11 = EHF NOTE 4 This classification is in accordance with Radio Regulations, I.T.U. Geneva, 1959.	Band number	Frequency range (lower limit exclusive, upper limit inclusive)	Corresponding metric subdivision	4	3– 30 kHz	Myriametric waves	5	30– 300 kHz	Kilometric waves	6	300–3 000 kHz	Hectometric waves	7	3– 30 MHz	Decametric waves	8	30– 300 MHz	Metric waves	9	300–3 000 MHz	Decimetric waves	10	3– 30 GHz	Centimetric waves	11	30– 300 GHz	Millimetric waves	12	300–3 000 GHz 3 THz	Decimillimetric waves
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12	300–3 000 GHz 3 THz	Decimillimetric waves																														
307 1205	microwaves	Electromagnetic waves of sufficiently short wavelength that practical use can be made of waveguide and associated cavity techniques in their transmission and reception.																														
307 1206	microwave frequencies	The frequencies of microwaves.																														
307 1207	frequency band	1. A continuous group of frequencies for which the oscillations or the waves have comparable properties. 2. The frequency range within which an equipment can be adjusted to operate.																														
307 1208	service band	A band of frequencies allocated to one or more radiocommunication services by national or international regulations.																														
307 13	<i>Carrier modulation</i>																															
307 1301	independent-sideband transmission	A method of operation in which each sideband corresponds to one or more modulating signals independent of the modulating signal(s) for the other sideband. NOTE In practice, the carrier is either partially or wholly suppressed.																														
307 1302	reduced-carrier transmission	An amplitude-modulated transmission in which the level of the carrier is reduced in comparison with that necessary to ensure a correct reconstitution of the modulating signal (without distortion) by means of a linear detector.																														
307 1303	pilot wave; pilot	A low-level signal transmitted for receiver control purposes, e.g. automatic tuning control and automatic gain control.																														

No.	Term	Definition
307 1304	carrier compression	An unwanted change in the amplitude of the pilot carrier of a single sideband or independent sideband transmitter which occurs when a sideband signal is present. The change, whether an increase or a decrease, is commonly referred to as "compression".
307 14	Noise and interference	
307 1401	atmospheric noise	Radio noise produced by natural electric discharges below the ionosphere and reaching the receiver along the normal propagation paths between the Earth and the lower limit of the ionosphere.
307 1402	atmospheric	An isolated element of atmospheric noise.
307 1403	cosmic noise; extra-terrestrial noise	Noise arising from natural phenomena outside the atmosphere.
307 1404	man-made noise	Noise having its source in electrical apparatus or machines.
307 1405	interference	Disturbance experienced in the reception of a wanted signal, caused by an unwanted signal or noise.
307 1406	interfering transmitter	A transmitter giving rise to interference.
307 1407	jamming	Deliberate interference, due to unwanted signals, which is intended to render unintelligible or to falsify the whole or part of the desired signal.
307 1408	anti-jamming; A.J.	<i>In radar.</i> Reducing the effects of jamming.
307 1409	jammer; jamming transmitter	A transmitter for producing a jamming signal.

307 2 Aerials

307 21 *Aerials, elements and components*

307 21	<i>Aerials, elements and components</i>	GENERAL NOTE. Throughout this section, where a definition implies the use of a component in a transmitting system, its use in a receiving system also applies, with suitable modification, unless specifically stated to the contrary.
307 2101	aerial	That part of a radio system which is designed to radiate electromagnetic waves into free space. This does not include the transmission lines or wave-guide to the radiator.
307 2102	aerial element	A primary or secondary radiator which is a component of an aerial.
307 2103	primary radiator; driven aerial; active aerial	An aerial element connected to a transmitter by a feeder.
307 2104	secondary radiator; parasitic radiator; passive aerial; parasitic aerial	An aerial element not connected to the transmitter by a feeder.
307 2105	reflector	A secondary radiator or an array of secondary radiators or a reflecting surface placed behind a primary radiator or an array of primary radiators or a feed, in order to increase forward and reduce backward radiation from the aerial.
307 2106	passive reflector	A reflector used to modify the direction of propagation.

No.	Term	Definition
307 2107	director	A secondary radiator placed in front of a primary radiator in order to increase the forward radiation.
307 2108	feeder	That part of a radio system by means of which radio-frequency energy is carried from the transmitter to its aerial. <i>Examples.</i> Twin wire, balanced multi-wire, coaxial cable, coaxial line, waveguide, etc.
307 2109	down lead	That part of an aerial, either vertical or inclined, connected at its lower end to the feeder and at its upper end to other parts of the aerial.
307 2110	earth system	A conductor, or system of conductors, laid on or in the ground and not normally insulated from it and serving as an earth connection to a transmitter.
307 2111	counterpoise	A conductor, or group of conductors, placed above the earth, used in association with an aerial system, insulated from the earth and replacing an earth system.
307 2112	earth mat	A conductor, or group of conductors, associated with an aerial and disposed in a horizontal plane on the ground, usually connected to earth, and acting as an artificial plane highly conducting earth.
307 2113	capacity top	A conducting element, or group of conducting elements, connected at the end of a radiating element to modify the current distribution in the latter.
307 2114	balun	A passive device, usually having distributed electrical constants, used for coupling an aerial to a feeder when one is balanced and the other is unbalanced. A balun may also be used for coupling other balanced and unbalanced transmission elements. NOTE The term is derived from "balanced-to-unbalanced transformer".
307 2115	quarter-wave sleeve	A type of balun for coupling a balanced aerial to a coaxial line. It consists of a quarter-wavelength coaxial shield around the outer conductor of the coaxial line and connected to it at the end remote from the junction of the coaxial line and the balanced aerial.
307 2116	Pawsey stub	A form of balun used for coupling a coaxial feeder to a balanced aerial. It consists of a cylindrical conductor of the same diameter as the outer of the feeder, mounted parallel to and at a small fraction of a wavelength from the outer and connected to it at the end remote from the aerial feed point. The aerial arms are connected one to the outer of the feeder and one to the parallel rod, the latter being also connected to the inner of the feeder.
307 2117	compensating network	A network fitted at the input terminals of an aerial to minimize the imaginary component of the complex impedance and to reduce variations (over a specified frequency band) of the real component.
307 2118	aerial matching transformer	A device for matching as closely as practicable the impedances of the aerial and its feeder.
307 2119	power divider	<i>Of an aerial.</i> A device for distributing in definite proportions the power from a transmitter to several aerials or aerial elements.
307 2120	combiner; multiplexer	<i>Of an aerial.</i> A device allowing several transmitters to be run in parallel on the same aerial without interaction.