Symbol	Typ	Titel
H	**Sektion**	**ELECTRICITY**
H04	**Klasse**	**ELECTRIC COMMUNICATION TECHNIQUE**
H04B	**Unterklasse**	**TRANSMISSION (transmission systems for measured values, control or similar signals G08C; speech analysis or synthesis G10L; coding, decoding or code conversion, in general H03M; broadcast communication H04H; multiplex systems H04J; secret communication H04K; transmission of digital information H04L) [4]**
H04B 1/00	**Hauptgruppe**	**Details of transmission systems, not covered by a single one of groups H04B 3/00 to H04B 13/00; Details of transmission systems not characterised by the medium used for transmission (tuning resonant circuits H03J) [4]**
H04B 1/02	1-Punkt Untergruppe	. Transmitters (spatial arrangements of component circuits in radio pills for living beings A61B 5/07)
H04B 1/03	2-Punkt Untergruppe	. . Constructional details, e.g. casings, housings [2]
H04B 1/034	3-Punkt Untergruppe	. . . Portable transmitters [2]
H04B 1/036	3-Punkt Untergruppe	. . . Cooling arrangements (cooling transformers H01F 27/08; cooling discharge tubes H01J 7/24 , H01J 19/74) [2]
H04B 1/04	2-Punkt Untergruppe	. . Circuits (of television transmitters H04N 5/38)
H04B 1/06	1-Punkt Untergruppe	. Receivers (control of amplification H03G; television receivers H04N 5/44 , H04N 5/64)
H04B 1/08	2-Punkt Untergruppe	. . Constructional details, e.g. cabinet
H04B 1/10	2-Punkt Untergruppe	. . Means associated with receiver for limiting or suppressing noise or interference
H04B 1/12	3-Punkt Untergruppe	. . . Neutralising, balancing, or compensation arrangements
H04B 1/14	3-Punkt Untergruppe	. . . Automatic detuning arrangements
H04B 1/16	2-Punkt Untergruppe	. . Circuits
H04B 1/18	3-Punkt Untergruppe	. . . Input circuits, e.g. for coupling to an aerial or a transmission line (input circuits for amplifiers in general H03F; coupling networks between aerials or lines and receivers independent of the nature of the receiver H03H)
H04B 1/20	3-Punkt Untergruppe	. . . for coupling gramophone pick-up, recorder output, or microphone to receiver
H04B 1/22	3-Punkt Untergruppe	. . . for receivers in which no local oscillation is generated
H04B 1/24	4-Punkt Untergruppe	. . . . the receiver comprising at least one semiconductor device having three or more electrodes
H04B 1/26	3-Punkt Untergruppe	. . . for superheterodyne receivers (multiple frequency-changing H03D 7/16)
H04B 1/28	4-Punkt Untergruppe	. . . . the receiver comprising at least one semiconductor device having three or more electrodes
H04B 1/30	3-Punkt Untergruppe	. . . for homodyne or synchrodyne receivers (demodulator circuits H03D 1/22)
H04B 1/38	1-Punkt Untergruppe	. Transceivers, i.e. devices in which transmitter and receiver form a structural unit and in which at least one part is used for functions of transmitting and receiving
H04B 1/40	2-Punkt Untergruppe	. . Circuits
H04B 1/44	3-Punkt Untergruppe	. . . Transmit/receive switching (tubes therefor H01J 17/64; waveguide switches H01P 1/10) [2]
H04B 1/46	4-Punkt Untergruppe	. . . . by voice-frequency signals; by pilot signals
H04B 1/48	4-Punkt Untergruppe	. . . . in circuit for connecting transmitter and receiver to a common transmission path, e.g. by energy of transmitter (in radar systems G01S)

Symbol	Typ	Titel
H04B 1/50	3-Punkt Untergruppe	. . . using different frequencies for the two directions of communication
H04B 1/52	4-Punkt Untergruppe	. . . . Hybrid arrangements, i.e. for transition from single-path two-way transmission to single transmission on each of two paths, or vice versa
H04B 1/54	3-Punkt Untergruppe	. . . using the same frequency for both directions of communication (H04B 1/44 takes precedence)
H04B 1/56	4-Punkt Untergruppe	. . . . with provision for simultaneous communication in both directions
H04B 1/58	4-Punkt Untergruppe	. . . . Hybrid arrangements, i.e. for transition from single-path two-way transmission to single transmission on each of two paths, or vice versa
H04B 1/59	1-Punkt Untergruppe	. Responders; Transponders (relay systems H04B 7/14)
H04B 1/60	1-Punkt Untergruppe	. Supervising unattended repeaters
H04B 1/62	1-Punkt Untergruppe	. for providing a predistortion of the signal in the transmitter and corresponding correction in the receiver, e.g. for improving the signal/noise ratio
H04B 1/64	2-Punkt Untergruppe	. . Volume compression or expansion arrangements
H04B 1/66	1-Punkt Untergruppe	. for reducing bandwidth of signals (in speech analysis-synthesis techniques G10L 19/00; in pictorial communication systems H04N); for improving efficiency of transmission (H04B 1/68 takes precedence)
H04B 1/68	1-Punkt Untergruppe	. for wholly or partially suppressing the carrier or one side band [4]
H04B 1/69	1-Punkt Untergruppe	. Spread spectrum techniques in general (for code multiplex systems H04J 13/02) [6]
H04B 1/707	2-Punkt Untergruppe	. . using direct sequence modulation [6]
H04B 1/713	2-Punkt Untergruppe	. . using frequency hopping [6]
H04B 1/72	1-Punkt Untergruppe	. Circuits or components for simulating aerials, e.g. dummy aerial (dissipative waveguide terminations H01P 1/26)
H04B 1/74	1-Punkt Untergruppe	. for increasing reliability, e.g. using redundant or spare channels or apparatus [3]
H04B 1/76	1-Punkt Untergruppe	. Pilot transmitters or receivers for control of transmission or for equalising [3]
H04B 3/00	**Hauptgruppe**	**Line transmission systems (combined with near-field transmission systems H04B 5/00; constructional features of cables H01B 11/00)**
H04B 3/02	1-Punkt Untergruppe	. Details
H04B 3/03	2-Punkt Untergruppe	. . Hybrid circuits (for transceivers H04B 1/52 , H04B 1/58; hybrid junctions of the waveguide type H01P 5/16) [3]
H04B 3/04	2-Punkt Untergruppe	. . Control of transmission; Equalising (control of amplification in general H03G)
H04B 3/06	3-Punkt Untergruppe	. . . by the transmitted signal
H04B 3/08	4-Punkt Untergruppe	. . . . in negative-feedback path of line amplifier
H04B 3/10	3-Punkt Untergruppe	. . . by pilot signal
H04B 3/11	4-Punkt Untergruppe	. . . . using pilot wire (H04B 3/12 take precedence) [3]
H04B 3/12	4-Punkt Untergruppe	. . . . in negative-feedback path of line amplifier
H04B 3/14	3-Punkt Untergruppe	. . . characterised by the equalising network used
H04B 3/16	3-Punkt Untergruppe	. . . characterised by the negative-impedance network used
H04B 3/18	4-Punkt Untergruppe	. . . . wherein the network comprises semiconductor devices

Symbol	Typ	Titel
H04B 3/20	2-Punkt Untergruppe	. . Reducing echo effects or singing; Opening or closing transmitting path; Conditioning for transmission in one direction or the other
H04B 3/21	3-Punkt Untergruppe	. . . using a set of bandfilters [3]
H04B 3/23	3-Punkt Untergruppe	. . . using a replica of transmitted signal in the time domain, e.g. echo cancellers [3]
H04B 3/26	2-Punkt Untergruppe	. . Improving frequency characteristic by the use of loading coils (loading coils per se H01F 17/08)
H04B 3/28	2-Punkt Untergruppe	. . Reducing interference caused by currents induced in cable sheathing or armouring
H04B 3/30	2-Punkt Untergruppe	. . Reducing interference caused by unbalance current in a normally balanced line
H04B 3/32	2-Punkt Untergruppe	. . Reducing cross-talk, e.g. by compensating
H04B 3/34	3-Punkt Untergruppe	. . . by systematic interconnection of lengths of cable during laying; by addition of balancing components to cable during laying
H04B 3/36	2-Punkt Untergruppe	. . Repeater circuits (H04B 3/58 takes precedence; amplifiers therefor H03F)
H04B 3/38	3-Punkt Untergruppe	. . . for signals in two different frequency ranges transmitted in opposite directions over the same transmission path
H04B 3/40	2-Punkt Untergruppe	. . Artificial lines; Networks simulating a line of certain length
H04B 3/42	2-Punkt Untergruppe	. . Circuits for by-passing of ringing signals
H04B 3/44	2-Punkt Untergruppe	. . Arrangements for feeding power to a repeater along the transmission line
H04B 3/46	2-Punkt Untergruppe	. . Monitoring; Testing
H04B 3/48	3-Punkt Untergruppe	. . . Testing attenuation
H04B 3/50	1-Punkt Untergruppe	. Systems for transmission between fixed stations via two-conductor transmission lines (H04B 3/54 takes precedence)
H04B 3/52	1-Punkt Untergruppe	. Systems for transmission between fixed stations via waveguides
H04B 3/54	1-Punkt Untergruppe	. Systems for transmission via power distribution lines (in alarm signalling systems G08B 25/06; remote indication of power network conditions, remote control of switching means in a power distribution network H02J 13/00)
H04B 3/56	2-Punkt Untergruppe	. . Circuits for coupling, blocking, or by-passing of signals
H04B 3/58	2-Punkt Untergruppe	. . Repeater circuits (amplifiers therefor H03F)
H04B 3/60	1-Punkt Untergruppe	. Systems for communication between relatively movable stations, e.g. for communication with lift (H04B 3/54 takes precedence)
H04B 5/00	**Hauptgruppe**	**Near-field transmission systems, e.g. inductive loop type**
H04B 5/02	1-Punkt Untergruppe	. using transceiver
H04B 5/04	1-Punkt Untergruppe	. Calling systems, e.g. paging system
H04B 5/06	1-Punkt Untergruppe	. using a portable transmitter associated with a microphone
H04B 7/00	**Hauptgruppe**	**Radio transmission systems, i.e. using radiation field (H04B 10/00 , H04B 15/00 take precedence)**
H04B 7/005	1-Punkt Untergruppe	. Control of transmission; Equalising [3]
H04B 7/01	1-Punkt Untergruppe	. Reducing phase shift [3]
H04B 7/015	1-Punkt Untergruppe	. Reducing echo effects [3]

Symbol	Typ	Titel
H04B 7/02	1-Punkt Untergruppe	. Diversity systems (for direction finding G01S 3/72; aerial arrays or systems H01Q)
H04B 7/04	2-Punkt Untergruppe	. . using a plurality of spaced independent aerials
H04B 7/06	3-Punkt Untergruppe	. . . at transmitting station
H04B 7/08	3-Punkt Untergruppe	. . . at receiving station
H04B 7/10	2-Punkt Untergruppe	. . using a single aerial system characterised by its polarisation or directive properties, e.g. polarisation diversity, direction diversity
H04B 7/12	2-Punkt Untergruppe	. . Frequency-diversity systems
H04B 7/14	1-Punkt Untergruppe	. Relay systems (interrogator-responder radar systems G01S 13/74) [2]
H04B 7/145	2-Punkt Untergruppe	. . Passive relay systems [2]
H04B 7/15	2-Punkt Untergruppe	. . Active relay systems [2]
H04B 7/155	3-Punkt Untergruppe	. . . Ground-based stations (H04B 7/204 takes precedence) [2, 5]
H04B 7/165	4-Punkt Untergruppe	. . . . employing angle modulation [2]
H04B 7/17	4-Punkt Untergruppe	. . . . employing pulse modulation, e.g. pulse code modulation [2]
H04B 7/185	3-Punkt Untergruppe	. . . Space-based or airborne stations (H04B 7/204 takes precedence) [2, 5]
H04B 7/19	4-Punkt Untergruppe	. . . . Earth-synchronous stations [2]
H04B 7/195	4-Punkt Untergruppe	. . . . Non-synchronous stations [2]
H04B 7/204	3-Punkt Untergruppe	. . . Multiple access [5]
H04B 7/208	4-Punkt Untergruppe	. . . . Frequency-division multiple access [5]
H04B 7/212	4-Punkt Untergruppe	. . . . Time-division multiple access [5]
H04B 7/216	4-Punkt Untergruppe	. . . . Code-division or spread-spectrum multiple access (spread spectrum techniques in general H04B 1/69) [5]
H04B 7/22	1-Punkt Untergruppe	. Scatter propagation systems
H04B 7/24	1-Punkt Untergruppe	. for communication between two or more posts (for selecting H04Q 7/00) [2]
H04B 7/26	2-Punkt Untergruppe	. . at least one of which is mobile [2]
H04B 10/00	**Hauptgruppe**	**Transmission systems employing beams of corpuscular radiation, or electromagnetic waves other than radio waves, e.g. light, infra-red (optical coupling, mixing or splitting G02B; light guides G02B 6/00; switching, modulation, demodulation of light beams G02B , G02F; devices or arrangements for the control, e.g. modulation, of light beams G02F 1/00; devices or arrangements for demodulating light, transferring the modulation or changing the frequency of light G02F 2/00; optical multiplex systems H04J 14/00) [5]**
H04B 10/02	1-Punkt Untergruppe	. Details [5]
H04B 10/04	2-Punkt Untergruppe	. . Transmitters [5]
H04B 10/06	2-Punkt Untergruppe	. . Receivers [5]
H04B 10/08	2-Punkt Untergruppe	. . Equipment for monitoring, testing or fault measuring [5]
H04B 10/10	*1-Punkt Untergruppe*	*. Transmission through free space, e.g. through the atmosphere (H04B 10/22 , H04B 10/24 , H04B 10/30 take precedence) [5, 7]*

Symbol	Typ	Titel
H04B 10/105	2-Punkt Untergruppe	. . specially adapted for satellite links [6]
H04B 10/12	*1-Punkt Untergruppe*	*. Transmission through light guides, e.g. optical fibres (H04B 10/22 , H04B 10/24 , H04B 10/30 take precedence) [5, 7]*
H04B 10/13	2-Punkt Untergruppe	. . using multimodal transmission [6]
H04B 10/135	2-Punkt Untergruppe	. . using single mode transmission [6]
H04B 10/14	2-Punkt Untergruppe	. . Terminal stations [5]
H04B 10/142	3-Punkt Untergruppe	. . . Coherent homodyne or heterodyne systems [6]
H04B 10/145	4-Punkt Untergruppe	. . . . Transmitters [6]
H04B 10/148	4-Punkt Untergruppe	. . . . Receivers [6]
H04B 10/152	3-Punkt Untergruppe	. . . Non-coherent direct-detection systems [6]
H04B 10/155	4-Punkt Untergruppe	. . . . Transmitters [6]
H04B 10/158	4-Punkt Untergruppe	. . . . Receivers [6]
H04B 10/16	2-Punkt Untergruppe	. . Repeaters [5]
H04B 10/17	3-Punkt Untergruppe	. . . in which processing or amplification is carried out without conversion of the signal from optical form [6]
H04B 10/18	2-Punkt Untergruppe	. . Arrangements for reducing or eliminating distortion or dispersion, e.g. equalisers [5]
H04B 10/20	2-Punkt Untergruppe	. . Arrangements for networking, e.g. bus or star coupling [5]
H04B 10/207	3-Punkt Untergruppe	. . . using a star-type coupler [6]
H04B 10/213	3-Punkt Untergruppe	. . . using a T-type coupler [6]
H04B 10/22	*1-Punkt Untergruppe*	*. Transmission between two stations which are mobile relative to each other (H04B 10/30 takes precedence) [5, 7]*
H04B 10/24	*1-Punkt Untergruppe*	*. Bidirectional transmission (H04B 10/22 , H04B 10/30 take precedence) [5, 7]*
H04B 10/26	2-Punkt Untergruppe	. . using a single light source for both stations involved [6]
H04B 10/28	2-Punkt Untergruppe	. . using a single device as a light source or a light receiver [6]
H04B 10/30	*1-Punkt Untergruppe*	*. Transmission systems employing beams of corpuscular radiation (arrangements for handling beams of corpuscular radiation, e.g. focusing, moderating, G21K 1/00) [7]*
H04B 11/00	**Hauptgruppe**	**Transmission systems employing ultrasonic, sonic or infrasonic waves**
H04B 13/00	**Hauptgruppe**	**Transmission systems characterised by the medium used for transmission, not provided for in groups H04B 3/00 to H04B 11/00**
H04B 13/02	1-Punkt Untergruppe	. Transmission systems in which the medium consists of the earth or a large mass of water thereon, e.g. earth telegraphy (line transmission systems with earth or water return H04B 3/00)
H04B 14/00	**Hauptgruppe**	**Transmission systems not characterised by the medium used for transmission (details thereof H04B 1/00) [4]**
H04B 14/02	1-Punkt Untergruppe	. characterised by the use of pulse modulation (in radio transmission relays H04B 7/17) [4]
H04B 14/04	2-Punkt Untergruppe	. . using pulse code modulation (analogue/digital or digital/analogue conversion H03M 1/00) [4]
H04B 14/06	2-Punkt Untergruppe	. . using differential modulation, e.g. delta modulation (conversion of analogue values to or from differential modulation H03M 3/00) [4]
H04B 14/08	1-Punkt Untergruppe	. characterised by the use of a sub-carrier [4]

Symbol	Typ	Titel
H04B 15/00	**Hauptgruppe**	**Suppression or limitation of noise or interference (by means associated with receiver H04B 1/10)**
H04B 15/02	1-Punkt Untergruppe	. Reducing interference from electric apparatus by means located at or near the interfering apparatus (structural association with dynamo-electric machines H02K 11/00)
H04B 15/04	2-Punkt Untergruppe	. . the interference being caused by substantially sinusoidal oscillations, e.g. in a receiver, in a tape-recorder (reducing parasitic oscillations H03B , H03F; screening H05K 9/00)
H04B 15/06	3-Punkt Untergruppe	. . . by local oscillators of receivers
H04B 17/00	**Hauptgruppe**	**Monitoring; Testing [2]**
H04B 17/02	1-Punkt Untergruppe	. of relay systems [2]