

INTERNATIONAL STANDARD



**Audio, video and multimedia systems – General channel assignment
of multichannel audio**

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INTERNATIONAL STANDARD



**Audio, video and multimedia systems – General channel assignment
of multichannel audio**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUDIO, VIDEO AND MULTIMEDIA SYSTEMS –

GENERAL CHANNEL ASSIGNMENT OF MULTICHANNEL AUDIO

FOREWORD

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International Standard IEC 62574 has been prepared by technical area 20 of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) model of channel assignment spaces is changed;
- b) definition of channel maps and labels is changed;
- c) metadata is newly specified;
- d) channel maps and labels from the first edition are included in Annex A.

The text of this International Standard is based on the following documents:

CDV	Report on voting
100/3198/CDV	100/3246/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

There are many multichannel audio formats and there will be new formats. These formats have a specific channel assignment, such as a channel mapping and channel labels, but the basic channel assignments are not so different from each other. These can be unified to one common channel assignment as the general channel assignment. This general channel assignment provides audio devices and digital audio interfaces with the usage of unified channel assignments for any multichannel audio formats. This second edition provides consistency with various standards. The channel names have changed in this second edition; the differences are shown in Annex B. Since there are standards that refer to the first edition of this document (see Clause A.1), IEC 62574:2011 (the first edition) is cited at length in Annex A. The first edition (IEC 62574:2011) and the second edition (this document) can be distinguished by the numbering of the channels.

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AUDIO, VIDEO AND MULTIMEDIA SYSTEMS –

GENERAL CHANNEL ASSIGNMENT OF MULTICHANNEL AUDIO

1 Scope

This document specifies the general channel assignment and the metadata for multichannel audio formats. ~~The general channel assignment as a~~ This document, with its channel mapping and labelling content, provides the unified usage of channel assignments for source devices, digital audio interfaces and sink devices. ~~This standard~~ The general channel assignment excludes the specification of the exact position of each loudspeaker. The metadata has the exact position of each loudspeaker; however, since the position of the loudspeaker is different in various surround sound formats, the position information of the metadata is not standardized. It is aimed at consumer applications, ~~but~~; it is not targeted at theatrical environments. Up to ~~32~~ 65 labels for loudspeaker positions and 15 labels for loudspeakers on the display are specified, which can be used for all current multichannel audio formats. The channel assignment concept is room centric and listener centric. This general channel assignment specifies the position of the loudspeaker as seen from the listener.

2 Normative reference

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

overhead layer

loudspeaker-layer located vertically above the high layer, nominally near or on the ceiling (overhead), labelled beginning with the letter designation "Oh"

3.2

high layer

loudspeaker-layer located vertically below the overhead layer and above the middle layer, nominally located above the screen, or near the ceiling, labelled beginning with the letter designation "H"

3.3

middle layer

loudspeaker-layer located nominally in the vertical plane at height of the listeners ears, or alternatively at the centre of the screen, whose labels do not carry a letter designation

3.4

bottom layer

loudspeaker-layer located nominally below the screen, or near the floor, labelled beginning with the letter designation "Bt"

3.5

front left

FL

loudspeaker position located at the front left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.6

front right

FR

loudspeaker position located at the front right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.7

front centre

FC

loudspeaker position located at frontal centre in the middle layer, or alternatively corresponding to the centre of the screen, as viewed from the seating area

Note 1 to entry: This note applies to the French language only.

3.8

low-frequency effects

LFE

sound effects in the low-frequency band, generally below 120 Hz; the LFE channel is not used as a subwoofer channel to compensate for the low-frequency band of each loudspeaker

Note 1 to entry: When mono LFE is used, it is conveyed in the LFE channel and the LFE loudspeaker's position at the bottom layer is not defined.

Note 2 to entry: This note applies to the French language only.

3.9

left surround

LS

loudspeaker position located at the left side slightly behind the listener in the middle layer

Note 1 to entry: This note applies to the French language only.

3.10

right surround

RS

loudspeaker position located at the right side slightly behind the listener in the middle layer

Note 1 to entry: This note applies to the French language only.

3.11

front left centre

FLc

loudspeaker position located at the front left of centre in the middle layer

Note 1 to entry: This note applies to the French language only.

3.12

front right centre

FRc

loudspeaker position located at the front right of centre in the middle layer

Note 1 to entry: This note applies to the French language only.

3.13**back centre****BC**

loudspeaker position located at centre back in the middle layer

Note 1 to entry: This note applies to the French language only.

3.14**low-frequency effects 1****LFE1**

LFE loudspeaker position located at the bottom layer and normally far left front

Note 1 to entry: This note applies to the French language only.

3.15**side left****SiL**

loudspeaker position located on the left side in the middle layer

Note 1 to entry: This note applies to the French language only.

3.16**side right****SiR**

loudspeaker position located on the right side in the middle layer

Note 1 to entry: This note applies to the French language only.

3.17**high front left****HFL**

loudspeaker position located at the front left in the high layer

Note 1 to entry: This note applies to the French language only.

3.18**high front right****HFR**

loudspeaker position located at the front right in the high layer

Note 1 to entry: This note applies to the French language only.

3.19**high front centre****HFC**

loudspeaker position located at front centre in the high layer

Note 1 to entry: This note applies to the French language only.

3.20**overhead centre****OhC**

loudspeaker position located at the centre in the overhead layer directly above the seating area

Note 1 to entry: This note applies to the French language only.

3.21**high left surround****HLS**

loudspeaker position located at the left slightly behind the listener in the high layer

Note 1 to entry: This note applies to the French language only.

3.22

high right surround

HRS

loudspeaker position located at the right slightly behind the listener in the high layer

Note 1 to entry: This note applies to the French language only.

3.23

high side left

HSiL

loudspeaker position located on the left side in the high layer

Note 1 to entry: This note applies to the French language only.

3.24

high side right

HSiR

loudspeaker position located on the right side in the high layer

Note 1 to entry: This note applies to the French language only.

3.25

high back centre

HBC

loudspeaker position located at centre back in the high layer

Note 1 to entry: This note applies to the French language only.

3.26

bottom front centre

BtFC

loudspeaker position located at centre front in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.27

bottom front left middle

BtFLmid

loudspeaker position located at the front left in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.28

bottom front right middle

BtFRmid

loudspeaker position located at the front right in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.29

front left wide

FLw

loudspeaker position located at the front far left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.30

front right wide

FRw

loudspeaker position located at the far front right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.31**back left****BL**

loudspeaker position located at the back left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.32**back right****BR**

loudspeaker position located at the back right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.33**left back surround****LBS**

loudspeaker position located halfway between LS and BL in the middle layer

Note 1 to entry: This note applies to the French language only.

3.34**right back surround****RBS**

loudspeaker position located halfway between RS and BR in the middle layer

Note 1 to entry: This note applies to the French language only.

3.35**high back left****HBL**

loudspeaker position located at the back left in the high layer

Note 1 to entry: This note applies to the French language only.

3.36**high back right****HBR**

loudspeaker position located at the back right in the high layer

Note 1 to entry: This note applies to the French language only.

3.37**high front left wide****HFLw**

loudspeaker position located at the front far left in the high layer

Note 1 to entry: This note applies to the French language only.

3.38**high front Right wide****HFRw**

loudspeaker position located at the far front right in the high layer

Note 1 to entry: This note applies to the French language only.

3.39**overhead front left****OhFL**

loudspeaker position located at the front left in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.40

overhead front right

OhFR

loudspeaker position located at the front right in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.41

overhead side left

OhSiL

loudspeaker position located on the left side in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.42

overhead side right

OhSiR

loudspeaker position located on the right side in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.43

overhead back left

OhBL

loudspeaker position located at the back left in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.44

overhead back right

OhBR

loudspeaker position located at the back right in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.45

high front left middle

HFLmid

loudspeaker position located at the front left middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.46

high front right middle

HFRmid

loudspeaker position located at the front right middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.47

high back left middle

HBLmid

loudspeaker position located at the back left middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.48

high back right middle

HBRmid

loudspeaker position located at the back right middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.49**front left middle****FLmid**

loudspeaker position located at the front left middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.50**front right middle****FRmid**

loudspeaker position located at the front right middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.51**back left middle****BLmid**

loudspeaker position located at the back left middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.52**back right middle****BRmid**

loudspeaker position located at the back right middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.53**low frequency effects 2****LFE2**

LFE loudspeaker position located at the bottom layer and normally far right front, when LFE1 is used

Note 1 to entry: This note applies to the French language only.

3.54**overhead back centre****OhBC**

loudspeaker position located at the back centre in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.55**display left****DL**

loudspeaker position located at the left edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.56**display right****DR**

loudspeaker position located at the right edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.57**display left centre****DLC**

loudspeaker position located halfway between the centre of the display and the left edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.58

display right centre

DRC

loudspeaker position located halfway between the centre of the display and the right edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.59

display centre

DC

loudspeaker position located at the centre of the display

Note 1 to entry: This note applies to the French language only.

3.60

high display left

HDL

loudspeaker position located at the left edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.61

high display right

HDR

loudspeaker position located at the right edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.62

high display left centre

HDLc

loudspeaker position located halfway between the centre of the display and the left edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.63

high display right centre

HDRc

loudspeaker position located halfway between the centre of the display and the right edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.64

high display centre

HDC

loudspeaker position located at the centre of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.65

bottom display left

BtDL

loudspeaker position located at the left edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.66**bottom display right****BtDR**

loudspeaker position located at the right edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.67**bottom display left centre****BtDLc**

loudspeaker position located halfway between the centre of the display and left edge of the bottom level on display

Note 1 to entry: This note applies to the French language only.

3.68**bottom display right centre****BtDRc**

loudspeaker position located halfway between the centre of the display and the right edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.69**bottom display centre****BtDC**

loudspeaker position located at the centre of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.70**channel assignment**

assignment of multichannel audio format including speaker configuration, loudspeaker setup, channel name, channel label, channel ID, and channel order for transmission and recording

Note 1 to entry: The channel assignment excludes the specification of the exact position of each loudspeaker.

3.71**channel assignment on display**

channel assignment for loudspeakers on the screen

Note 1 to entry: "Loudspeaker on screen" is defined as "on display".

3.72**channel number**

numbering of each channel

3.73**channel label ID**

label of ID

3.74**speaker configuration**

information about number of overhead speakers, number of high speakers, number of middle speakers, number of bottom speakers and number of LFE speakers

Note 1 to entry: "Speaker" and "speaker configuration" both mean loudspeaker.

Note 2 to entry: Examples of speaker configuration: stereo is described as 0.0.2.0.0, 5.1ch as 0.0.5.0.1 and 22.2ch as 1.8.10.3.2.

3.75

loudspeaker position

information of loudspeaker position shown by azimuth, elevation and distance

3.76

direction of loudspeaker

centre direction of response pattern indicated by azimuth and tilt

3.77

directional response pattern

directional response pattern for loudspeaker

Note 1 to entry: Refer to IEC 60268-5.

3.78

frequency range

span from the lowest frequency to the highest frequency over which a loudspeaker is, or should be, capable of satisfactory sound reproduction

3.79

subwoofer

loudspeaker for low-frequency sound reproduction

3.80

dialogue

information for commentary (speech)

3.81

screen

surface on which a picture appears, located in front of the listener in the middle layer

4 General channel assignment

4.1 General

The channel assignment specifies the channels of multichannel audio; the loudspeaker assignment specifies the geometrical positions of the loudspeaker.

4.2 Model

Figure 1 shows the model of channel assignment spaces with the four layers, and a listener is located in the centre of the bottom layer. The middle layer is located at the vertical centre of the picture screen or, alternatively, at the same height as the height of a listener's ear.

This model specifies the general channel assignments in these four layers, which are the overhead layer, the high layer, the middle layer and the bottom layer. Each layer specifies channels in its layer.

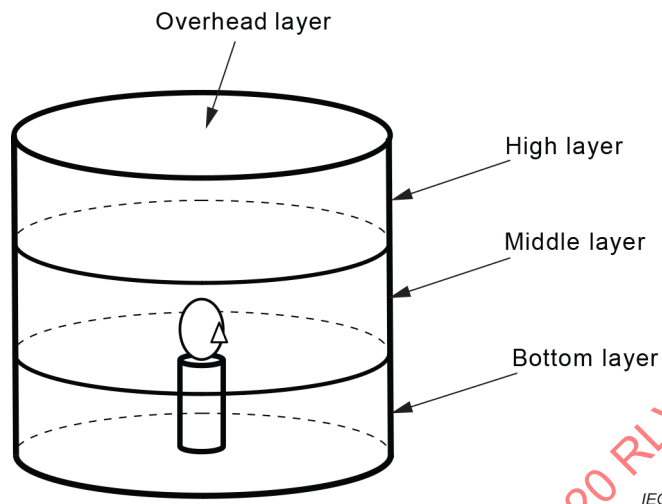


Figure 1 – Model of channel spaces

Figure 2 shows the overhead layer with its channel assignments, Figure 3 shows the high layer with its channel assignments, Figure 4 shows the middle layer with its channel assignments, Figure 5 shows the bottom layer with its channel assignments, and Figure 6 shows the channel assignments on the display.

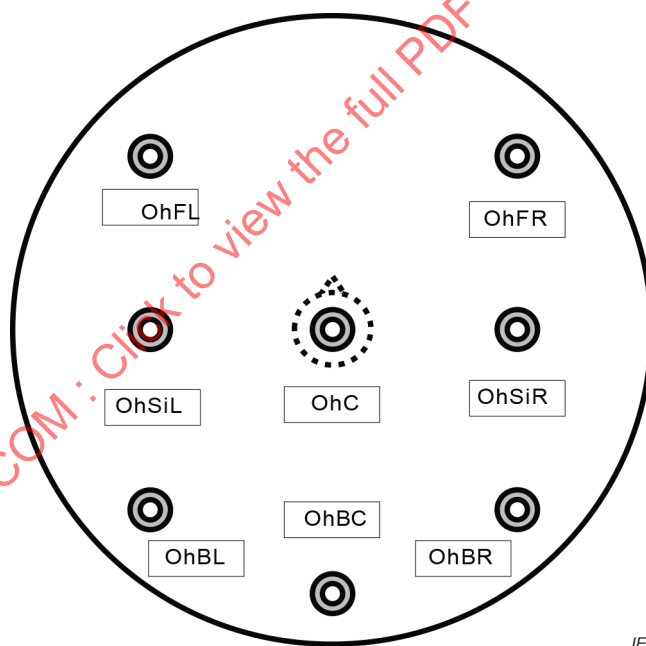


Figure 2 – Overhead layer

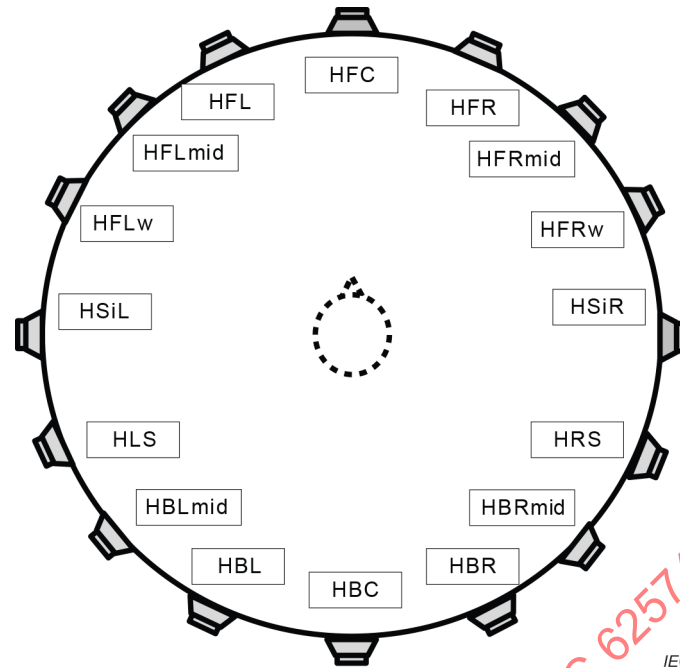


Figure 3 – High layer

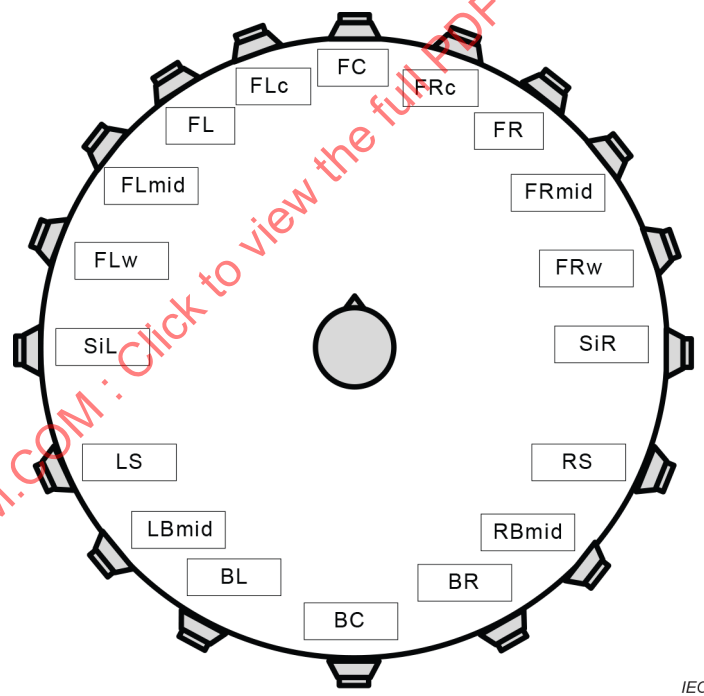


Figure 4 – Middle layer

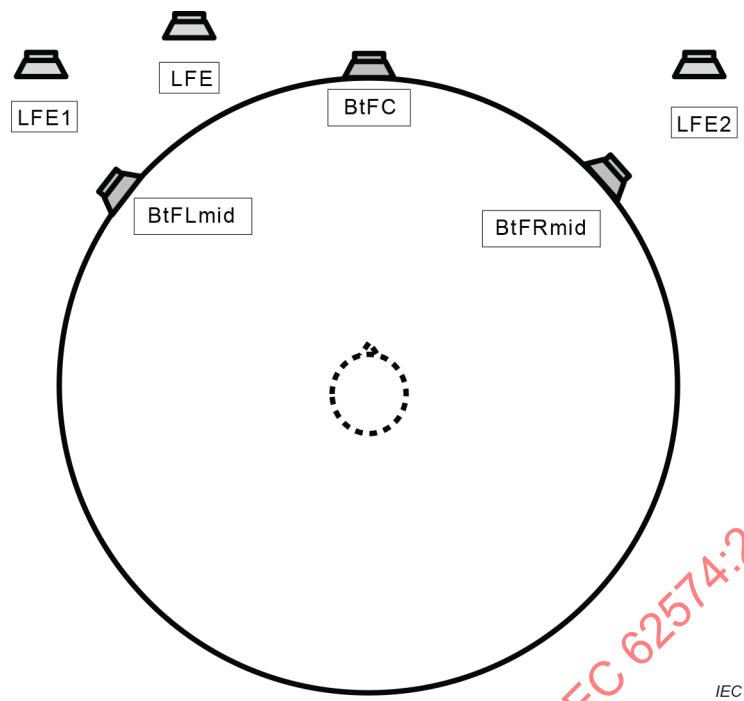


Figure 5 – Bottom layer

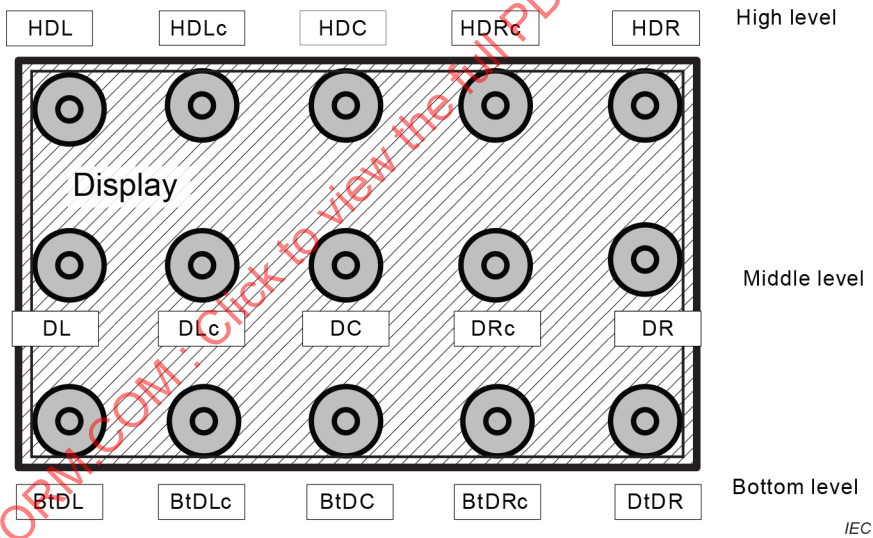


Figure 6 – Channel assignment on the display

4.3 Channel maps and labels

Table 1 shows the definition of channel maps and labels of the general channel assignments. The channel label has an ID name as an abbreviation label for each channel label. Each name is case sensitive.

Table 1 – General channel assignment

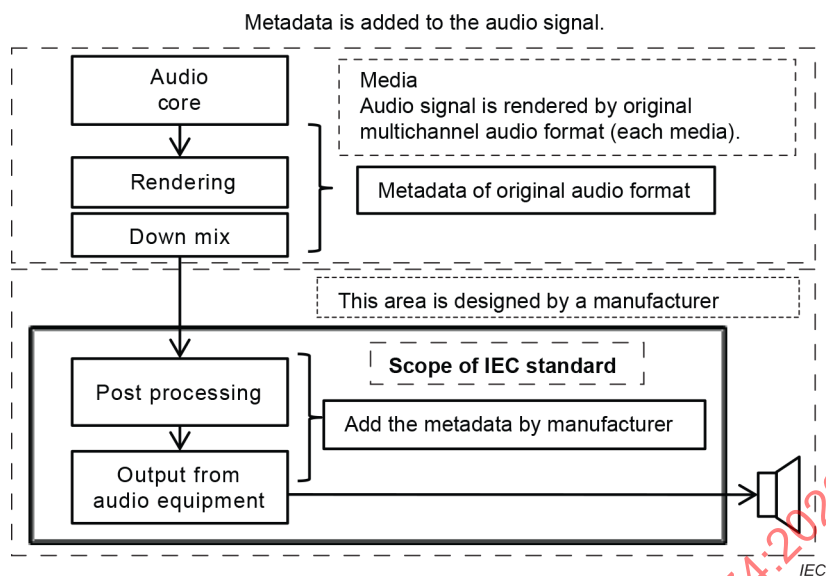
Layer	Channel number	Channel label ID name	Full name of ID
Middle	65	FL	Front left
Middle	66	FR	Front right
Middle	67	FC	Front centre
Bottom	68	LFE	Low frequency effects
Middle	69	LS	Left surround
Middle	70	RS	Right surround
Middle	71	FLc	Front left centre
Middle	72	FRc	Front right centre
Middle	73	BC	Back centre
Bottom	74	LFE1	Low frequency effects 1
Middle	75	SiL	Side left
Middle	76	SiR	Side right
High	77	HFL	High front left
High	78	HFR	High front right
High	79	HFC	High front centre
Overhead	80	OhC	Overhead centre
High	81	HLS	High left surround
High	82	HRS	High right surround
High	83	HSiL	High side left
High	84	HSiR	High side right
High	85	HBC	High back centre
Bottom	86	BtFC	Bottom front centre
Bottom	87	BtFLmid	Bottom front left middle
Bottom	88	BtFRmid	Bottom front right middle
Middle	89	FLw	Front left wide
Middle	90	FRw	Front right wide
Middle	91	BL	Back left
Middle	92	BR	Back right
Middle	93	LBS	Left back surround
Middle	94	RBS	Right back surround
High	95	HBL	High back left
High	96	HBR	High back right
High	97	HFLw	High front left wide
High	98	HFRw	High front right wide
Overhead	99	OhFL	Overhead front left
Overhead	100	OhFR	Overhead front right
Overhead	101	OhSiL	Overhead side left
Overhead	102	OhSiR	Overhead side right
Overhead	103	OhBL	Overhead back left
Overhead	104	OhBR	Overhead back right
High	105	HFLmid	High front left middle
High	106	HFRmid	High front right middle

Layer	Channel number	Channel label ID name	Full name of ID
High	107	HBLmid	High Back left middle
High	108	HBRmid	High front right wide
Middle	109	FLmid	Front left middle
Middle	110	FRmid	Front right middle
Middle	111	BLmid	Back left middle
Middle	112	BRmid	Back right middle
Bottom	113	LFE2	Low frequency effects-2
Overhead	114	OhBC	Overhead back centre
Channel assignment on the display			
Display	151	DL	Display left
Display	152	DR	Display right
Display	153	DLc	Display left centre
Display	154	DRc	Display right centre
Display	155	DC	Display centre
Display	156	HDL	High display left
Display	157	HDR	High display right
Display	158	HDLc	High display left centre
Display	159	HDRc	High display right centre
Display	160	HDC	High display centre
Display	161	BtDL	Bottom display left
Display	162	BtDR	Bottom display right
Display	163	BtDLc	Bottom display left centre
Display	164	BtDRc	Bottom display right centre
Display	165	BtDC	Bottom display centre
NOTE Many multichannel audio formats have the original channel name. They are not same as each format. Table B.1 shows a comparison chart with the channel name of IEC 62574:2011.			

5 Metadata

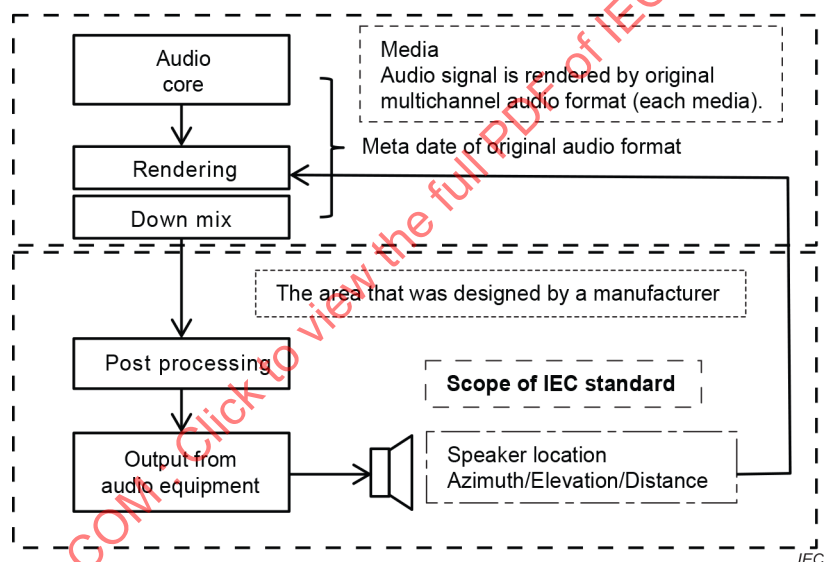
5.1 General

Metadata carries information on the speaker configuration of the multichannel audio format and other necessary information to reproduce its audio signal properly. The scope of metadata does not include the information of the rendering and the broadcast. If the manufacturer adds metadata to the rendered signal, it is possible to obtain correct channel information for post processing. For example, if the optional virtual surround system can obtain correct speaker information for the rendered signal, correct compatibility is obtained (see Figure 7a). If there is accurate speaker position information, the ideal reproduced sound can be rendered (see Figure 7b).



a) Information for channel assignment

Metadata shows the position of loudspeaker



b) Information of the location for loudspeaker

Figure 7 – Scope of metadata

5.2 Metadata list

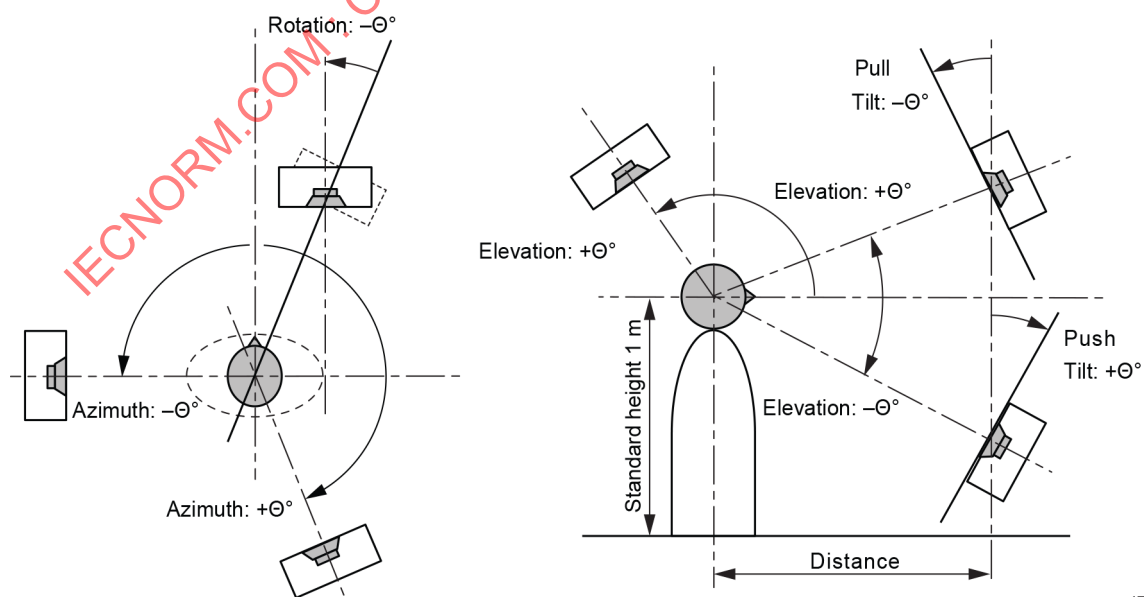
The specification of metadata is shown in Table 2.

Table 2 – Metadata

Metadata	Contents	Unit
Channel number	Number	number
Channel label ID	Name	ASCII
Speaker configuration e.g. Stereo is described as 0.0.2.0.0, 5.1ch as 0.0.5.0.1 and 22.2ch as 1.8.10.3.2	Overhead speaker	Quantity
	High speakers	Quantity
	Middle speakers	Quantity
	Bottom speakers	Quantity
	Subwoofer (LFE)	Quantity
Loudspeaker position	Azimuth	degree
	Elevation	degree
	Distance	cm
	Source or Sink	ASCII
Direction of loudspeaker	Rotation	degree
	Tilt	degree
	Directional response pattern	degree
Frequency range	Low-end frequency	Hz
	High-end frequency	Hz
Dialogue	Source	Commentary
LFE	LFE playback level	dB

5.3 Definition of loudspeaker position

Measurement of loudspeaker shall be done as shown in Figure 8. The actual loudspeaker position is indicated by azimuth, elevation and tilt. The value shows metadata in loudspeaker position and direction of loudspeaker. Definition of loudspeaker angle is shown in Table 3, and this table shows the range of each angle.



IEC

Figure 8 – Loudspeaker location

Table 3 – Definition of loudspeaker angle

Loudspeaker position			Direction of loudspeaker		
Azimuth	right → plus	0 → +180°	Rotation	right → plus	0 → +90°
	left → minus	0 → -180°		left → minus	0 → -90°
Elevation	up → plus	0 → +180°	Tilt	push → plus	0 → +90°
	down → minus	0 → -90°		pull → minus	0 → -90°

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Annex A (normative)

Channel maps and labels in edition 1

A.1 General

Many standards used the channel maps and labels in IEC 62574:2011. However, there are cases where BL, BR and LS, RS are used in reverse from other standards. Channel numbers 1 to 32 are referred to in IEC 62574:2011. Clauses A.2 and A.3 are copied from IEC 62574:2011.

NOTE 1 This document is consistent with 5.1 specified by ITU-R BS.775-3 and maintains legacy compatibility. BL, BR and LS, LR of IEC 62574:2011 are different from ITU-R BS.775-3. In this document, BL, BR and LS, LR were placed in the same position as ITU-R BS.775-3.

NOTE 2 The following standards refer to IEC 62574:2011.

- ARIB STD-B59, ISO/IEC 23001-8, ITU-R BS.2159-7
- The Institute of Image Information and Television Engineers; Standard test materials for three-dimensional multichannel stereophonic sound system - Series A

A.2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE The general sequence of position labels is used: height, front/back, left/centre/right. Absence of a height letter indicates the middle layer. The other two planes are always indicated. See also Table A.1.

A.2.1

top layer

top (highest) layer of three loudspeaker layers located at the top of the screen, alternatively at the top of the room; loudspeaker channels of the top layer are annotated with the letters Tp

A.2.2

middle layer

middle layer of three loudspeaker layers located at the vertical centre of the TV screen, alternatively at the same height as the height of viewer's ear

A.2.3

bottom layer

bottom (lowest) layer of three loudspeaker layers located at the bottom of the TV screen, alternatively at floor level of the room; loudspeaker channels of the bottom layer are annotated with the letters Bt

A.2.4

front left

FL

loudspeaker position located at far left and centred vertically of the middle layer

A.2.5

front right

FR

loudspeaker position located at far right and centred vertically of the middle layer

A.2.6

front centre

FC

loudspeaker position located in the middle layer corresponding to the centre of the TV screen, as viewed from the seating area

A.2.7

low frequency effects

LFE

carry only sound effects in low-frequency band, generally below 120 Hz; the LFE channel is not used as a subwoofer channel to compensate for the low-frequency band of each loudspeaker

A.2.8

low frequency effects 1

LFE1

LFE loudspeaker position located at the bottom layer

Note 1 to entry: When mono LFE is used, it is conveyed in the LFE1 channel and the LFE1 loudspeaker position at the bottom layer is not defined. When LFE2 is also used, the LFE1 loudspeaker position is normally located far left front at the bottom layer.

A.2.9

back left

BL

loudspeaker position located at far left back of the middle layer

A.2.10

back right

BR

loudspeaker position located at far right back of the middle layer

A.2.11

front left centre

FLc

loudspeaker position located mid-way between the front centre and front left of the middle layer

A.2.12

front right centre

FRc

loudspeaker position located mid-way between the front centre and front right of the middle layer

A.2.13

back centre

BC

loudspeaker position located at centre back of the middle layer

A.2.14

low frequency effects 2

LFE2

LFE loudspeaker position located at the bottom layer and normally far right front, ~~when LFE1 is used~~

A.2.15

side left

SiL

loudspeaker position located on the left of the middle layer

A.2.16**side right****SiR**

loudspeaker position located on the right of the middle layer

A.2.17**top front left****TpFL**

loudspeaker position located at far left front of the top layer

A.2.18**top front right****TpFR**

loudspeaker position located at far right front of the top layer

A.2.19**top front centre****TpFC**

loudspeaker position located at centre front of the top layer

A.2.20**top centre****TpC**

loudspeaker position located at the centre of the top layer directly above the seating area

A.2.21**top back left****TpBL**

loudspeaker position located at far left back of the top layer

A.2.22**top back right****TpBR**

loudspeaker position located at far right back of the top layer

A.2.23**top side left****TpSiL**

loudspeaker position located on the left of the top layer

A.2.24**top side right****TpSiR**

loudspeaker position located on the right of the top layer

A.2.25**top back centre****TpBC**

loudspeaker position located at centre back of the top layer

A.2.26**bottom front centre****BtFC**

loudspeaker position located at centre front of the bottom layer

A.2.27

bottom front left

BtFL

loudspeaker position located at far left front of the bottom layer

A.2.28

bottom front right

BtFR

loudspeaker position located at far right front of the bottom layer

A.2.29

front left wide

FLw

loudspeaker position located at front left end in the room in the middle layer

A.2.30

front right wide

FRw

loudspeaker position located at front right end in the room in the middle layer

A.2.31

left surround

LS

array of loudspeakers positioned along the left side of the middle layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.32

right surround

RS

array of loudspeakers positioned along the right side of the middle layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.33

left surround direct

LSd

loudspeaker position located on the left wall of the middle layer for localized directionality as opposed to the diffuse array

A.2.34

right surround direct

RSd

loudspeaker position located on the right wall of the middle layer for localized directionality as opposed to the diffuse array

A.2.35

top left surround

TpLS

array of loudspeakers positioned along the right side of the top layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.36

top right surround

TpRS

array of loudspeakers positioned along the right side of the top layer starting approximately 1/3 of the distance from the screen to the back wall

A.3 General channel assignment

A.3.1 General

The channel assignment specifies the channels of multichannel audio, the loudspeaker assignment is the loudspeaker position of its channels.

A.3.2 The model

Figure A.1 shows the model, in IEC 62574:2011, of channel assignment spaces with the three layers, and a listener is located in the centre of the bottom layer. The middle layer is located at the vertical centre of the picture screen or alternatively at the same height as the height of a listener's ear.

This model specifies the general channel assignments in these three layers, which are the top layer, the middle layer and the bottom layer. Each layer specifies channels in its layer.

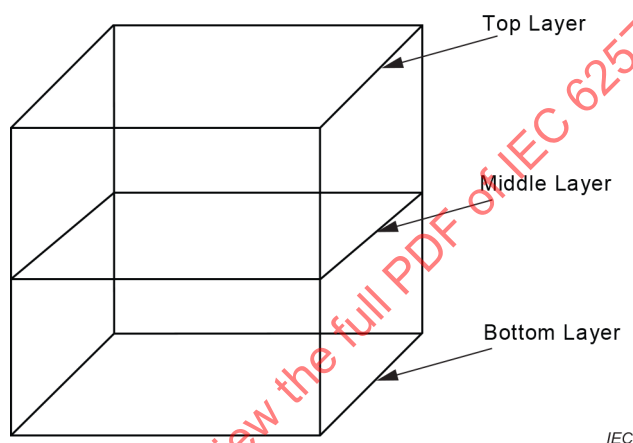


Figure A.1 – Model of channel spaces

Figure A.2 shows the top layer with its channel assignments, Figure A.3 shows the middle layer with its channel assignments and Figure A.4 shows the bottom layer with its channel assignments in IEC 62574:2011.

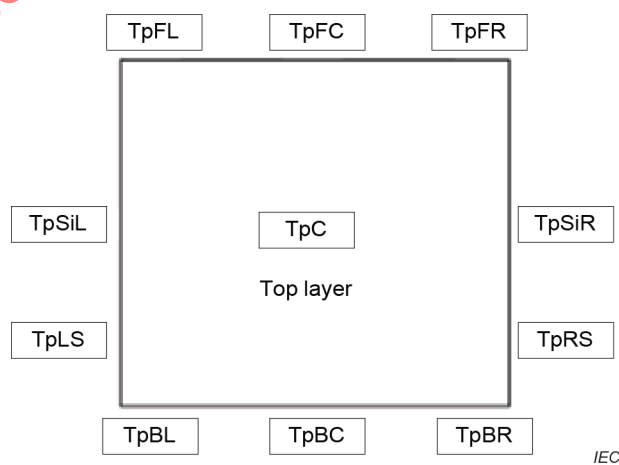


Figure A.2 – Top layer

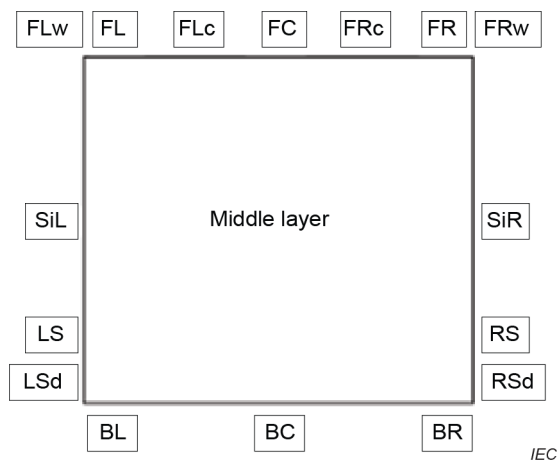


Figure A.3 – Middle layer

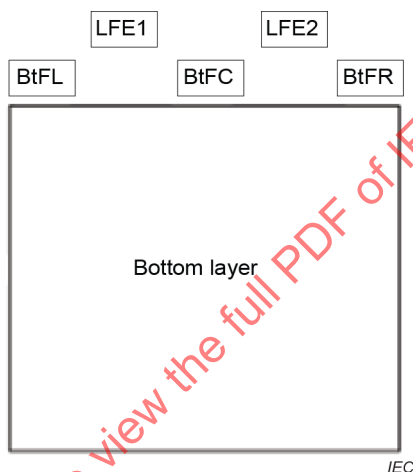


Figure A.4 – Bottom layer

A.4 Channel maps and labels

Table A.1 shows the definition of channel maps and labels of the general channel assignments in IEC 62574:2011. The channel label has an ID name as abbreviation label for each channel label. Each name is case sensitive.

Table A.1 – General channel assignment table in IEC 62574:2011

Channel number	Channel label ID name	Full name of ID
1/2	FL/FR	Front Left/Front Right
3/4	FC/LFE1	Front Centre/Low Frequency Effects-1
5/6	BL/BR	Back Left/Back Right
7/8	FLc/FRc	Front Left centre/Front Right centre
9/10	BC/LFE2	Back Centre/Low Frequency Effects-2
11/12	SiL/SiR	Side Left/Side Right
13/14	TpFL/TpFR	Top Front Left/Top Front Right
15/16	TpFC/TpC	Top Front Centre/Top Centre
17/18	TpBL/TpBR	Top Back Left/Top Back Right
19/20	TpSiL/TpSiR	Top Side Left/Top Side Right
21/22	TpBC/BtFC	Top Back Centre/Bottom Front Centre
23/24	BtFL/BtFR	Bottom Front Left/Bottom Front Right
25/26	FLw/FRw	Front Left wide/Front Right wide
27/28	LS/RS	Left Surround/Right Surround
29/30	LSd/RSd	Left Surround direct/Right Surround direct
31/32	TpLS/TpRS	Top Left Surround/Top Right Surround

Annex B (informative)

Comparison table

B.1 General

This annex is a comparison chart of loudspeaker positions between IEC and other multichannel audio formats. The same channel name may not be in the same position depending on the multichannel audio format. These tables help in understanding the compatibility of each multichannel audio format.

B.2 Comparison table for each edition of IEC 62574

Table B.1 is a comparison table between edition 1 and edition 2 (this document) of IEC 62574.

Table B.1 – Comparison table for each edition of IEC 62574

IEC 62574 Ed1			IEC 62574 Ed2 (this document)			
Channel number	Channel label ID name	Full name of ID	Layer	Channel number	Channel label ID name	Full name of ID
7	FLc	Front left centre	Middle	65	FL	Front left
8	FRc	Front right centre	Middle	66	FR	Front right
3	FC	Front centre	Middle	67	FC	Front centre
4	LFE1	Low frequency effects-1	Bottom	68	LFE	Low frequency effects
27	LS	Left surround	Middle	69	LS	Left surround
28	RS	Right surround	Middle	70	RS	Right surround
			Middle	71	FLc	Front left centre
			Middle	72	FRc	Front right centre
9	BC	Back centre	Middle	73	BC	Back centre
(4)	LFE1	Low frequency effects-1	Bottom	74	LFE1	Low frequency effects-1
11	SiL	Side left	Middle	75	SiL	Side left
12	SiR	Side right	Middle	76	SiR	Side right
13	TpFL	Top front left	High	77	HFL	High front left
14	TpFR	Top front right	High	78	HFR	High front right
15	TpFC	Top front centre	High	79	HFC	High front centre
16	TpC	Top centre	Over head	80	OhC	Overhead centre
31	TpLS	Top left surround	High	81	HLS	High left surround
32	TpRS	Top right surround	High	82	HRS	High right surround
19	TpSiL	Top side left	High	83	HSiL	High side left
20	TpSiR	Top side right	High	84	HSiR	High side right
21	TpBC	Top back centre	High	85	HBC	High back centre
22	BtFC	Bottom front centre	Bottom	86	BtFC	Bottom front centre
23	BtFL	Bottom front left	Bottom	87	BtFL	Bottom front left
24	BtFR	Bottom front right	Bottom	88	BtFR	Bottom front right
1	FL	Front left	Middle	89	FLw	Front left wide
2	FR	Front right	Middle	90	FRw	Front right wide
5	BL	Back left	Middle	91	BL	Back left
6	BR	Back right	Middle	92	BR	Back right
29	LSd	Left surround direct	Middle	93	LBS	Left back surround
30	RSd	Right surround direct	Middle	94	RBS	Right back surround
17	TpBL	Top back left	High	95	HBL	High back left
18	TpBR	Top back right	High	96	HBR	High back right
25	FLw	Front left wide	No assignment in edition 2, "FLw and FRw" of edition 1 are room centric.			
26	FRw	Front right wide				
			High	97	HL	High left
			High	98	HR	High right
			Overhead	99	OhFL	Overhead front left
			Overhead	100	OhFR	Overhead front right
			Overhead	101	OhSiL	Overhead side left
			Overhead	102	OhSiR	Overhead side right
			Overhead	103	OhBL	Overhead back left
			Overhead	104	OhBR	Overhead back right
			High	105	HFLmid	high front left middle
			High	106	HFRmid	high front right middle
			High	107	HBLmid	high Back left middle
			High	108	HBRmid	high Back right wide

IEC 62574 Ed1			IEC 62574 Ed2 (this document)			
Channel number	Channel label ID name	Full name of ID	Layer	Channel number	Channel label ID name	Full name of ID
			Middle	109	FLmid	Front left middle
			Middle	110	FRmid	Front right middle
			Middle	111	BLmid	Back left middle
			Middle	112	BRmid	Back right middle
10	LFE2	Low frequency effects-2	Bottom	113	LFE2	Low frequency effects-2
The difference between Ed 1 and Ed 2 – It matches the definition of the position of BL / BR and LS / LR of ITU - R. – Moves BL / BR of channel number 5/6 to channel number 91/92. – Moves BL / BR of channel number 27/28 to channel number 69/70. – The other positional relationship is the same between Ed 1 and Ed 2. – Top layer has been renamed to High layer and "Overhead". – Added 97 ~ 165. – The azimuth of FL/FR in edition 1 is almost the same as FLw/FRw in edition 2. – The azimuth of FL/FR in edition 2 is almost the same as FLc/FRc in edition 1.			Overhead	114	OhBC	Overhead back centre
			Channel assignment on Display			
			Display	151	DL	Display left
			Display	152	DR	Display right
			Display	153	DLc	Display left centre
			Display	154	DRc	Display right centre
			Display	155	DC	Display centre
			Display	156	HDL	High display left
			Display	157	HDR	High display right
			Display	158	HDLc	High display left centre
			Display	159	HDRc	High display right centre
			Display	160	HDC	High display centre
			Display	161	BtDL	Bottom display left
			Display	162	BtDR	Bottom display right
			Display	163	BtDLc	Bottom display left centre
			Display	164	BtDRc	Bottom display right centre
			Display	165	BtDC	Bottom display centre

B.3 Comparison table for numbering of the channel

Table B.2 shows the order of numbering for the channel number, audio channel format ID and value. There is no relation in the numbering between each standard.

Table B.2 – Comparison table for numbering of the channel

IEC 62574 Ed1		IEC 62574 Ed2 (this document)		ETSI TS 103 420		ITU-R BS.2094-1		ISO/IEC 23001-8 (Table 8)	
Channel number	Channel label ID name	Channel number	Channel label ID name	AudioChannel FormatID	Speaker label(s)	AudioChannel FormatID	Speaker label(s)	Value	Abbr.
7	FLc	65	FL	AC_00011001	RC_L	AC_00010001	M+030	6	Lc
8	FRc	66	FR	AC_00011002	RC_R	AC_00010002	M-030	7	Rc
3	FC	67	FC	AC_00011003	RC_C	AC_00010003	M+000	2	C
4	LFE1	68	LFE	AC_00011004	RC_LFE	AC_00010004	LFE		
27	LS	69	LS	AC_00011005	RC_LSS	AC_00010005	M+110	4	Ls
28	RS	70	RS	AC_00011006	RC_RSS	AC_00010006	M-110	5	Rs
		71	FLc			AC_00010007	M+022		
		72	FRc			AC_00010008	M-022		
9	BC	73	BC			AC_00010009	M+180	10	Cs
(4)	LFE1	74	LFE1	AC_00011004	RC_LFE	AC_00010020	LFE1	3	LFE
11	SiL	75	SiL			AC_0001000a	M+090	13	Lss
12	SiR	76	SiR			AC_0001000b	M-090	14	Rss
13	TpFL	77	HFL	AC_00011009	RC_LFH	AC_0001000d	U+030	17	Lv
14	TpFR	78	HFR	AC_0001100a	RC_RFH	AC_0001000f	U-030	18	Rv
15	TpFC	79	HFC			AC_0001000e	U+000	19	Cv
16	TpC	80	OhC			AC_0001000c	T+000	25	Ts
31	TpLS	81	HLS	AC_0001100d	RC_LRH	AC_00010010	U+110	30	Lvs
32	TpRS	82	HRS	AC_0001100e	RC_RRH	AC_00010012	U-110	31	Rvs
19	TpSiL	83	HSiL	AC_0001100b	RC_LTM	AC_00010013	U+090	23	Lvss
20	TpSiR	84	HSiR	AC_0001100c	RC_RTM	AC_00010014	U-090	24	Rvss
21	TpBC	85	HBC			AC_00010011	U+180	22	Cvr
22	BiFC	86	BiFC			AC_00010015	B+000	29	Cb
23	BiFL	87	BiFL			AC_00010016	B+045	27	Lb
24	BiFR	88	BiFR			AC_00010017	B-045	28	Rb
1	FL	89	FLw	AC_0001100f	RC_LW	AC_00010018	M+060	0	L
2	FR	90	FRw	AC_00011010	RC_RW	AC_00010019	M-060	1	R
5	BL	91	BL	AC_00011007	RC_LRS			8	Lsr
6	BR	92	BR	AC_00011008	RC_RRS			9	Rsr
29	LSd	93	LBS					11	Lsd
30	RSd	94	RBS					12	Rsd
17	TpBL	95	HBL						
18	TpBR	96	HBR						
25	FLw							15	Lw
26	FRw							16	Rw

IEC 62574 Ed1		IEC 62574 Ed2 (this document)		ETSI TS 103 420		ITU-R BS.2094-1		ISO/IEC 23001-8 (Table 8)	
Channel number	Channel label ID name	Channel number	Channel label ID name	AudioChannel FormatID	Speaker label(s)	AudioChannel FormatID	Speaker label(s)	Value	Abbr.
		97	HL						
		98	HR						
		99	OhFL						
		100	OhFR						
		101	OhSiL						
		102	OhSiR						
		103	OhBL						
		104	OhBR						
		105	HFLmid			AC_00010022	U+045		
		106	HFRmid			AC_00010023	U-045		
		107	HBLmid			AC_0001001e	U+135	20	Lvr
		108	HBRmid			AC_0001001f	U-135	24	Rvr
		109	FLmid			AC_00010026	M+045		
		110	FRmid			AC_00010027	M-045		
		111	BLmid			AC_0001001c	M+135	8	Lsr
		112	BRmid			AC_0001001d	M-135	9	Rsr
10	LFE2	113	LFE2	AC_00011011	RC_LFE2	AC_00010021	LFE2	26	LFE2
						AC_0001001a	M+135_Diff		
						AC_0001001b	M-135_Diff		
		114	OhBC			AC_00010028	UH+180		
Channel assignment on Display									
		151	DL			AC_00010024	M+SC	37	Leos
		152	DR			AC_00010025	M-SC	38	Reos
		153	DLc					39	Hwbcsl
		154	DRc					40	Hwbcar
		155	DC						
		156	HDL						
		157	HDR						
		158	HDLc						
		159	HDRc						
		160	HDC						
		161	BtDL						
		162	BtDR						
		163	BtDLc						
		164	BtDRc						
		165	BtDC						

B.4 Comparison table for surround sound amplifier in consumer market

Table B.3 shows comparison table for surround sound of amplifier in consumer market. The angle of azimuth for loudspeaker position is shown in Figure 8 of this document.

Table B.3 – Comparison table for surround sound amplifier in consumer market
(1 of 3)

This document			Auro-3D® ¹ Home Theater Setup			
Channel number	Channel label ID name	Full name of ID	Abbrev	Speaker	Azimuth (°) Nominal (Range)	Elevation (°) Nominal (Range)
65	FL	Front left	L	Left	-30 (22-40)	0 (0-10)
66	FR	Front right	R	Right	30 (22-40)	0 (0-10)
67	FC	Front centre	C	centre	0	0 (0-10)
68	LFE	Low frequency effects	LFE	Low Frequency Enhancement		
69	LS	Left surround	Ls	Left Surround	-110 (90-135)	0 (0-10)
70	RS	Right surround	Rs	Right Surround	110 (90-135)	0 (0-10)
71	FLc	Front left centre				
72	FRc	Front right centre				
73	BC	Back centre				
74	LFE1	Low frequency effects-1				
75	SiL	Side left				
76	SiR	Side right				
77	HFL	High front left	HL	Height Left	-30 (22-40)	30 (25-40)
78	HFR	High front right	HR	Height Right	30 (22-40)	30 (25-40)
79	HFC	High front centre	HC	Height centre	0	30 (25-40)

¹ Auro-3D® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

This document			Auro-3D® ¹ Home Theater Setup			
Channel number	Channel label ID name	Full name of ID	Abbrev	Speaker	Azimuth (°) Nominal (Range)	Elevation (°) Nominal (Range)
80	OhC	Overhead centre	T	Top		90 (65-100)
81	HLS	High left surround	HLs	Height Left Surround	-110 (90-135)	30 (25-40)
82	HRS	High right surround	HRs	Height Right Surround	110 (90-135)	30 (25-40)
83	HSiL	High side left				
84	HSiR	High side right				
85	HBC	High back centre				
86	BtFC	Bottom front centre				
87	BtFLmid	Bottom front left middle				
88	BtFRmid	Bottom front right middle				
89	FLw	Front left wide				
90	FRw	Front right wide				
91	BL	Back left	Lb	Left Back	-150 (135-155)	0 (0-10)
92	BR	Back right	Rb	Right Back	150 (135-155)	0 (0-10)
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left				
100	OhFR	Overhead front right				
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left				
104	OhBR	Overhead back right				
105	HFLmid	High front left middle				
106	HFRmid	High front right middle				
107	HBLmid	High back left middle				
108	HBRmid	High back right wide				
109	FLmid	Front left middle				
110	FRmid	Front right middle				
111	BLmid	Back left middle				
112	BRmid	Back right middle				
113	LFE2	Low frequency effects-2				
114	OhBC	Overhead back centre				
Channel assignment on display						
151	DL	Display left				
152	DR	Display right				
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display left				
157	HDR	High display right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BtDL	Bottom display left				
162	BtDR	Bottom display right				
163	BtDLc	Bottom display left centre				
164	BtDRc	Bottom display right centre				
165	BtDC	Bottom display centre				

Table B.3 (2 of 3)

This document			Dolby Atmos® ² 9.1.6 Overhead Speakers		
Channel number	Channel label ID name	Full name of ID	Notation	Azimuth Nominal (Range)	Elevation Nominal (Range)
65	FL	Front left	Left speaker	-(22-30)	0
66	FR	Front right	Right speaker	(22-30)	0
67	FC	Front centre	centre speaker	0	0
68	LFE	Low frequency effects	Subwoofer		
69	LS	Left surround	Left surround speaker	-100(90-110)	0
70	RS	Right surround	Right surround speaker	100(90-110)	0
71	FLc	Front left centre			
72	FRc	Front right centre			
73	BC	Back centre			
74	LFE1	Low frequency effects-1			
75	SiL	Side left			
76	SiR	Side right			
77	HfL	High front left			
78	HfR	High front right			
79	HfC	High front centre			
80	OhC	Overhead centre			
81	HLS	High left surround			
82	HRS	High right surround			
83	HSiL	High side left			
84	HSiR	High side right			
85	HBC	High back centre			
86	BtFC	Bottom front centre			
87	BtFLmid	Bottom front left middle			
88	BtFRmid	Bottom front right middle			
89	FLw	Front left wide	Left wide speaker	-60(50-70)	0
90	FRw	Front right wide	Right wide speaker	60(50-70)	0
91	BL	Back left			
92	BR	Back right			
93	LBS	Left back surround			
94	RBS	Right back surround			
95	HBL	High back left			
96	HBR	High back right			
97	HFLw	High front left wide			
98	HFRw	High front right wide			
99	OhFL	Overhead front left	Left top front overhead speaker	-45(30-55)	45(30-55)
100	OhFR	Overhead front right	Right top front overhead speaker	45(30-55)	45(30-55)
101	OhSiL	Overhead side left	Left top middle overhead speaker	-90(75-105)	45(30-55)
102	OhSiR	Overhead side right	Right top middle overhead speaker	90(75-105)	45(30-55)
103	OhBL	Overhead back left	Left top rear overhead speaker	-135(125-150)	45(30-55)
104	OhBR	Overhead back right	Right top rear overhead speaker	135(125-150)	45(30-55)
105	HFLmid	High front left middle			
106	HFRmid	High front right middle			
107	HBLmid	High back left middle			
108	HBRmid	High back right middle			
109	FLmid	Front left middle	Left rear surround speaker	-135(135-150)	0
110	FRmid	Front right middle	Right rear surround speaker	135(135-150)	0
111	BLmid	Back left middle			
112	BRmid	Back right middle			
113	LFE2	Low frequency effects-2			
114	OhBC	Overhead back centre			
Channel assignment on display					
151	DL	Display left			
152	DR	Display right			
153	DLc	Display left centre			
154	DRc	Display right centre			
155	DC	Display centre			
156	HDL	High display left			
157	HDR	High display right			
158	HDLc	High display left centre			
159	HDRc	High display right centre			
160	HDC	High display centre			
161	BtDL	Bottom display left			
162	BtDR	Bottom display right			
163	BtLc	Bottom display left centre			
164	BtRc	Bottom display right centre			
165	BtDC	Bottom display centre			

² Dolby Atmos® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

Table B.3 (3 of 3)

This document			DTS:X® ³ Home Theater Setup Guidelines for Consumers			
Channel number	Channel label ID name	Full name of ID	LABEL	Notation	Azimuth Nominal (Range)	Elevation Nominal (Range)
65	FL	Front left	L	LEFT	-30(30-45)	0
66	FR	Front right	R	RIGHT	30(30-45)	0
67	FC	Front centre	C	centre	0	0
68	LFE	Low frequency effects	LFE1	LFE 1		
69	LS	Left surround	Ls	SRRD LEFT	-110(100-120)	0
70	RS	Right surround	Rs	SRRD RIGHT	110(100-120)	0
71	FLc	Front left centre	Lc	LEFT centre	-15	0
72	FRc	Front right centre	Rc	RIGHT centre	15	0
73	BC	Back centre	Cs	SRRD centre	180	0
74	LFE1	Low frequency effects-1				
75	SiL	Side left	Lss	SIDE SRRD LEFT	-90	0
76	SiR	Side right	Rss	SIDE SRRD RIGHT	90	0
77	HFL	High front left				
78	HFR	High front right				
79	HFC	High front centre	Ch	HIGH centre	0	45(20-45)
80	OhC	Overhead centre	Oh	TOP centre SRRD	0-360	90(75-90)
81	HLS	High left surround				
82	HRS	High right surround				
83	HSiL	High side left	Lhs	HIGH SIDE LEFT	-90	45(20-45)
84	HSiR	High side right	Rhs	HIGH SIDE RIGHT	90	45(20-45)
85	HBC	High back centre	Chr	HIGH REAR centre	180	45(20-45)
86	BIFC	Bottom front centre	Cb	LOW FRONT centre	0	-30(15-45)
87	BtFLmid	Bottom front left middle	Lb	LOW FRONT LEFT	-45(15-45)	-30(15-45)
88	BtFRmid	Bottom front right middle	Rb	LOW FRONT RIGHT	45(15-45)	-30(15-45)
89	FLw	Front left wide	Lw	LEFT WIDE	-60(50-70)	0
90	FRw	Front right wide	Rw	RIGHT WIDE	60(50-70)	0
91	BL	Back left	Lsr	REAR SRRD LEFT	-150(135-150)	0
92	BR	Back right	Rsr	REAR SRRD RIGHT	150(135-150)	0
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left	Ltf	TOP FRONT LEFT	-45(30-60)	60(50-70)
100	OhFR	Overhead front right	Rtf	TOP FRONT RIGHT	45(30-60)	60(50-70)
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left	Ltr	TOP REAR LEFT	-135(110-150)	60(50-70)
104	OhBR	Overhead back right	Rtr	TOP REAR RIGHT	135(110-150)	60(50-70)
105	HFLmid	High front left middle	Lh	HIGH LEFT	-45(30-60)	45(20-45)
106	HFRmid	High front right middle	Rh	HIGH RIGHT	45(30-60)	45(20-45)
107	HBLmid	High back left middle	Lhr	HIGH REAR LEFT	-135(110-150)	45(20-45)
108	HBRmid	High back right middle	Rhr	HIGH REAR RIGHT	135(110-135)	45(20-45)
109	FLmid	Front left middle				
110	FRmid	Front right middle				
111	BLmid	Back left middle				
112	BRmid	Back right middle				
113	LFE2	Low frequency effects-2	LFE2	LFE 2		
114	OhBC	Overhead back centre				
Channel assignment on display						
151	DL	Display left				
152	DR	Display right				
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display left				
157	HDR	High display right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BtDL	Bottom display left				
162	BtDR	Bottom display right				
163	BtDLc	Bottom display left centre				
164	BtDRc	Bottom display right centre				
165	BtDC	Bottom display centre				

³ DTS:X® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

B.5 Comparison table between this document and ITU-R BS2051-1

Table B.4 shows comparison table of the geometrical positions of the loudspeakers between this document and ITU-R BS2051-1. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.4 – Comparison table between this document and ITU-R BS2051-1
(1 of 2)

This document			ITU-R BS.2051-1		
Channel number	Channel label ID name	Full name of ID	SP Label	Azimuth	Elevation
65	FL	Front left	M+30	30	0
66	FR	Front right	M-30	-30	0
67	FC	Front centre	M+000	0	0
68	LFE	Low frequency effects	LFE		
69	LS	Left surround	M+110	110	0
70	RS	Right surround	M-110	-110	0
71	FLc	Front left centre	M+022	22	0
72	FRc	Front right centre	M-022	-22	0
73	BC	Back centre	M+180	180	0
74	LFE1	Low frequency effects-1	LFE1	45	-30
75	SiL	Side left	M+090	90	0
76	SiR	Side right	M-090	-90	0
77	HFL	High front left	U+030	30	30
78	HFR	High front right	U-030	-30	30
79	HFC	High front centre	U+000	0	30
80	OhC	Overhead centre	T+000	-	90
81	HLS	High left surround	U+110	110	30
82	HRS	High right surround	U-110	-110	30
83	HSiL	High side left	U+090	90	30
84	HSiR	High side right	U-090	-90	30
85	HBC	High back centre	U+180	180	30
86	BtFC	Bottom front centre	B+000	0	-30
87	BtFLmid	Bottom front left middle	B+045	45	-30
88	BtFRmid	Bottom front right middle	B-045	-45	-30
89	FLw	Front left wide	M+060	60	0
90	FRw	Front right wide	M-060	-60	0
91	BL	Back left			
92	BR	Back right			
93	LBS	Left back surround			
94	RBS	Right back surround			
95	HBL	High back left			
96	HBR	High back right			
97	HFLw	high front left wide	U+60	60	30
98	HFRw	high front right wide	U-60	-60	30
99	OhFL	Overhead front left			
100	OhFR	Overhead front right			
101	OhSiL	Overhead side left			
102	OhSiR	Overhead side right			
103	OhBL	Overhead back left			
104	OhBR	Overhead back right			
105	HFLmid	high front left middle	U+45	45	30
106	HFRmid	high front right middle	U-45	-45	30
107	HBLmid	high Back left middle	U+135	135	30
108	HBRmid	high Back right middle	U-135	-135	30
109	FLmid	Front left middle	M+45	45	0
110	FRmid	Front right middle	M-45	-45	0
111	BLmid	Back left middle	M+135	135	0
112	BRmid	Back right middle	M-135	-135	0
113	LFE2	Low frequency effects-2	LFE2	-45	-30
114	OhBC	Overhead back centre	UH+180	180	45
Channel assignment on display					
151	DL	Display left	M+SC	Left screen edge	
152	DR	Display right	M-SC	Right screen edge	
153	DLc	Display left centre			
154	DRc	Display right centre			
155	DC	Display centre			
156	HDL	High display left			
157	HDR	High display right			
158	HDLc	High display left centre			
159	HDRc	High display right centre			
160	HDC	High display centre			
161	BtDL	Bottom display left			
162	BtDR	Bottom display right			
163	BtLc	Bottom display left centre			
164	BtRc	Bottom display right centre			
165	BtDC	Bottom display centre			

Table B.4 (2 of 2)

This document		ITU-R BS.2051-1									
Channel number	Channel label ID name	Sound system									
		A	B	C	D	E	F	G	H	I	J
		0+2+0	0+5+0	2+5+0	4+5+0	4+5+1	3+7+0	4+9+0	9+10+3	0+7+0	4+7+0
65	FL	L	L	L	L	L	L	L	FLc	L	L
66	FR	R	R	R	R	R	R	R	FRc	R	R
67	FC		C	C	C	C	C	C	FC	C	C
68	LFE		LFE	LFE	LFE	LFE		LFE		LFE	LFE
69	LS		Ls	Ls	Ls	Ls					
70	RS		Rs	Rs	Rs	Rs					
71	FLc										
72	FRc										
73	BC								BC		
74	LFE1						LFE1		LFE1		
75	SiL						LS	Lss	SiL	Lss	Lss
76	SiR						RS	Rss	SiR	Rss	Rss
77	HFL			Ltf	Ltf	Ltf					
78	HFR			Rtf	Rtf	Rtf					
79	HFC								TpFC		
80	OhC								TpC		
81	HLS				Ltr	Ltr					
82	HRS				Rtr	Rtr					
83	HSiL								TpSiL		
84	HSiR								TpSiR		
85	HBC								TpBC		
86	BiFC					Cbf			BiFC		
87	BiFLmid								BiFL		
88	BiFRmid								BiFR		
89	FLw								FL		
90	FRw								FR		
91	BL										
92	BR										
93	LBS										
94	RBS										
95	HBL										
96	HBR										
97	HFLw										
98	HFRw										
99	OhFL										
100	OhFR										
101	OhSiL										
102	OhSiR										
103	OhBiL										
104	OhBiR										
105	HFLmid						LH	Ltf	TpFL		Ltf
106	HFRmid						RH	Rtf	TpRL		Rtf
107	HBLmid							Ltb	TpBL		Ltb
108	HBRmid							Rtb	TpBR		Rtb
109	FLmid										
110	FRmid										
111	BLmid						LB	Lrs	BL	Lrs	Lrs
112	BRmid						RB	Rrs	BR	Rrs	Rrs
113	LFE2						LFE2		LFE2		
114	OhBC						CH				
Channel assignment on display											
151	DL							Lsc			
152	DR							Rsc			
153	DLc										
154	DRc										
155	DC										
156	HDL										
157	HDR										
158	HDLc										
159	HDRc										
160	HDC										
161	BiDL										
162	BiDR										
163	BiLc										
164	BiRc										
165	BiDC										

B.6 Comparison table between this document and ITU-R BS2094-1

Table B.5 shows comparison tables of the geometrical positions of the loudspeakers between this document and ITU-R BS2051-1. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.5 – Comparison table between this document and ITU-R BS2094-1 (1 of 6)

This document			ITU-R BS.2094-1			
Channel number	Channel label ID name	Full name of ID	audioChannelFormatID	audioChannelFormatName	Azimuth (°)	Elevation (°)
	FL	Front left	AC_00010001	FrontLeft	M+030	0
66	FR	Front right	AC_00010002	FrontRight	M-030	0
67	FC	Front centre	AC_00010003	FrontCentre	M+000	0
68	LFE	Low frequency effects	AC_00010004*	LowFrequencyEffects	LFE	-30
69	LS	Left surround	AC_00010005	SurroundLeft	M+110	0
70	RS	Right surround	AC_00010006	SurroundRight	M-110	0
71	FLc	Front left centre	AC_00010007	FrontLeftOfCentre	M+022	0
72	FRc	Front right centre	AC_00010008	FrontRightOfCentre	M-022	0
73	BC	Back centre	AC_00010009	BackCentre	M+180	0
74	LFE1	Low frequency effects-1	AC_00010020*	LowFrequencyEffects1	LFE1	-30
75	SiL	Side left	AC_0001000a	SideLeft	M+090	0
76	SiR	Side right	AC_0001000b	SideRight	M-090	0
77	HFL	High front left	AC_0001000d	TopFrontLeft	U+030	30
78	HFR	High front right	AC_0001000f	TopFrontRight	U-030	30
79	HFC	High front centre	AC_0001000e	TopFrontCentre	U+000	30
80	OhC	Overhead centre	AC_0001000c	TopCentre	T+000	90
81	HLS	High left surround	AC_00010010	TopSurroundLeft	U+110	30
82	HRS	High right surround	AC_00010012	TopSurroundRight	U-110	30
83	HSiL	High side left	AC_00010013	TopSideLeft	U+090	30
84	HSiR	High side right	AC_00010014	TopSideRight	U-090	30
85	HBC	High back centre	AC_00010011	TopBackCentre	U+180	30
86	BiFC	Bottom front centre	AC_00010015	BottomFrontCentre	B+000	-30
87	BiFLmid	Bottom front left middle	AC_00010016	BottomFrontLeft	B+045	-30
88	BiFRmid	Bottom front right middle	AC_00010017	BottomFrontRight	B-045	-30
89	FLw	Front left wide	AC_00010018	FrontLeftWide	M+060	0
90	FRw	Front right wide	AC_00010019	FrontRightWide	M-060	0
91	BL	Back left				
92	BR	Back right				
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left				
100	OhFR	Overhead front right				
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left				
104	OhBR	Overhead back right				
105	HFLmid	High front left middle	AC_00010022	TopFrontLeftMid	U+045	30
106	HFRmid	High front right middle	AC_00010023	TopFrontRightMid	U-045	30
107	HBLmid	High back left middle	AC_0001001e	TopBackLeftMid	U+135	30
108	HBRmid	High back right middle	AC_0001001f	TopBackRightMid	U-135	30
109	FLmid	Front left middle	AC_00010026	FrontLeftMid	M+045	0
110	FRmid	Front right middle	AC_00010027	FrontRightMid	M-045	0
111	BLmid	Back left middle	AC_0001001c	BackLeftMid	M+135	0
112	BRmid	Back right middle	AC_0001001d	BackRightMid	M-135	0
113	LFE2	Low frequency effects-2	AC_00010021*	LowFrequencyEffectsR	LFE2	-30
			AC_0001001a	BackLeftMidDiffuse	M+135_Diff	0
			AC_0001001b	BackRightMidDiffuse	M-135_Diff	0
114	OhBC	Overhead back centre	AC_00010028	UpperTopBackCentre	UH+180	45
Channel assignment on display						
151	DL	Display left	AC_00010024	FrontLeftScreen	M+SC	0
152	DR	Display right	AC_00010025	FrontRightScreen	M-SC	0
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display Left				
157	HDR	High display Right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BiDL	Bottom display left				
162	BiDR	Bottom display right				
163	BiLc	Bottom display left centre				
164	BiRc	Bottom display right centre				
165	BiDC	Bottom display centre				

Table B.5 (2 of 6)

This document		ITU-R BS.2094-1				
Channel number	Channel label ID name	AP_00010001	AP_00010002	AP_0001000a	AP_0001000b	AP_0001000c
		mono_(0+1+0)	stereo_(0+2+0)	3.0_(0+3+0)	4.0_(0+4+0)	5.0_(0+5+0)
		BS.775	BS.775, BS.2051 (A)	BS.775	BS.775	BS.775
65	FL		FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR		FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre		FrontCentre	FrontCentre	FrontCentre
68	LFE					
69	LS					SurroundLeft
70	RS					SurroundRight
71	FLc					
72	FRc					
73	BC				BackCentre	
74	LFE1					
75	SiL					
76	SiR					
77	HFL					
78	HFR					
79	HFC					
80	OhC					
81	HLS					
82	HRS					
83	HSiL					
84	HSiR					
85	HBC					
86	BiFC					
87	BiFLmid					
88	BiFRmid					
89	FLw					
90	FRw					
91	BL					
92	BR					
93	LBS					
94	RBS					
95	HBL					
96	HBR					
97	HFLw					
98	HFRw					
99	OhFL					
100	OhFR					
101	OhSiL					
102	OhSiR					
103	OhBL					
104	OhBR					
105	HFLmid					
106	HFRmid					
107	HBLmid					
108	HBRmid					
109	FLmid					
110	FRmid					
111	BLmid					
112	BRmid					
113	LFE2					
114	OhBC					
Channel assignment on display						
151	DL					
152	DR					
153	DLc					
154	DRc					
155	DC					
156	HDL					
157	HDR					
158	HDLc					
159	HDRc					
160	HDC					
161	BiDL					
162	BiDR					
163	BiLc					
164	BiRc					
165	BiDC					

Table B.5 (3 of 6)

This document		ITU-R BS.2094-1				
Channel number	Channel label ID name	AP_00010003	AP_0001000d	AP_0001000e	AP_0001000f	AP_00010004
		5.1_(0+5+0)	6.1_(0+6+0)	7.1_front_(0+7+0)	7.1_back_(0+7+0)	7.1_top_(2+5+0)
		BS.775, BS.2051 (B)	N/A	N/A	BS.2051(I)	BS.2051 (C)
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft	SurroundLeft		SurroundLeft
70	RS	SurroundRight	SurroundRight	SurroundRight		SurroundRight
71	FLc					
72	FRc					
73	BC		BackCentre			
74	LFE1					
75	SiL				SideLeft	
76	SiR				SideRight	
77	HFL					TopFrontLeft
78	HFR					TopFrontRight
79	HFC					
80	OhC					
81	HLS					
82	HRS					
83	HSiL					
84	HSiR					
85	HBC					
86	BtFC					
87	BtFLmid					
88	BtFRmid					
89	FLw					
90	FRw					
91	BL					
92	BR					
93	LBS					
94	RBS					
95	HBL					
96	HBR					
97	HFLw					
98	HFRw					
99	OhFL					
100	OhFR					
101	OhSiL					
102	OhSiR					
103	OhBL					
104	OhBR					
105	HFLmid					
106	HFRmid					
107	HBLmid					
108	HBRmid					
109	FLmid			FrontLeftMid		
110	FRmid			FrontRightMid		
111	BLmid				BackLeftMid	
112	BRmid				BackRightMid	
113	LFE2					
114	OhBC					
Channel assignment on display						
151	DL					
152	DR					
153	DLc					
154	DRc					
155	DC					
156	HDL					
157	HDR					
158	HDLc					
159	HDRc					
160	HDC					
161	BtDL					
162	BtDR					
163	BtLc					
164	BtRc					
165	BtDC					

Table B.5 (4 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010012	AP_00010013	AP_00010014	AP_00010016
		7.1side_5.1+sc_(0+7+0)	7.1topside_5.1.2(0+5+0)	9.1screen_5.1.2+sc(2+7+0)	9.1_7.1.2(2+7+0)
		N/A	N/A	N/A	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft	SurroundLeft	
70	RS	SurroundRight	SurroundRight	SurroundRight	
71	FLc				
72	FRc				
73	BC				
74	LFE1				
75	SiL				SideLeft
76	SiR				SideRight
77	HFL				
78	HFR				
79	HFC				
80	OhC				
81	HLS				
82	HRS				
83	HSiL		TopSideLeft	TopSideLeft	TopSideLeft
84	HSiR		TopSideRight	TopSideRight	TopSideRight
85	HBC				
86	BtFC				
87	BtFLmid				
88	BtFRmid				
89	FLw				
90	FRw				
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HL				
96	HBR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid				
106	HFRmid				
107	HLmid				
108	HBRmid				
109	FLmid				
110	FRmid				
111	BLmid				BackLeftMid
112	BRmid				BackRightMid
113	LFE2				
114	OhBC				
Channel assignment on display					
151	DL	FrontLeftScreen		FrontLeftScreen	
152	DR	FrontRightScreen		FrontRightScreen	
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BtDL				
162	BtDR				
163	BtLc				
164	BtRc				
165	BtDC				

Table B.5 (5 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010005	AP_00010006	AP_00010007	AP_00010015
		9.1 5.1.4 (4+5+0)	10.1 (4+5+1)	10.2 (3+7+0)	11.1 5.1.4+sc (4+7+0)
		BS.2051 (D)	BS.2051 (E)	BS.2051 (F)	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects		LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft		SurroundLeft
70	RS	SurroundRight	SurroundRight		SurroundRight
71	FLc				
72	FRc				
73	BC				
74	LFE1			LowFrequencyEffectsL	
75	SiL			SideLeft	
76	SiR			SideRight	
77	HFL	TopFrontLeft	TopFrontLeft		TopFrontLeft
78	HFR	TopFrontRight	TopFrontRight		TopFrontRight
79	HFC				
80	OhC				
81	HLS	TopSurroundLeft	TopSurroundLeft		TopSurroundLeft
82	HRS	TopSurroundRight	TopSurroundRight		TopSurroundRight
83	HSiL				
84	HSiR				
85	HBC				
86	BtFC		BottomFrontcentre		
87	BtFLmid				
88	BtFRmid				
89	FLw				
90	FRw				
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HL				
96	HBR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid			TopFrontLeftMid	
106	HFRmid			TopFrontRightMid	
107	HLmid				
108	HBRmid				
109	FLmid				
110	FRmid				
111	BLmid			BackLeftMid	
112	BRmid			BackRightMid	
113	LFE2			LowFrequencyEffectsR	
114	OhBC			UpperTopBackCentre	
Channel assignment on display					
151	DL				FrontLeftScreen
152	DR				FrontRightScreen
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BtDL				
162	BtDR				
163	BtLc				
164	BtRc				
165	BtDC				

Table B.5 (6 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010017	AP_00010008	AP_00010009	AP_00010011
		11.1 7.1.4 (4+7+0)	13.1 (4+9+0)	22.2 (9+10+3)	Auro-3D (9+9+0)
		BS.2051(J)	BS.2051 (G)	BS.2051 (H)	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft *1	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight *2	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE		LowFrequencyEffectsL		LowFrequencyEffects
69	LS				SurroundLeft
70	RS				SurroundRight
71	FLc				
72	FRc				
73	BC			BackCentre	
74	LFE1	LowFrequencyEffectsL		LowFrequencyEffectsL	
75	SiL	SideLeft	SideLeft	SideLeft	SideLeft
76	SiR	SideRight	SideRight	SideRight	SideRight
77	HFL				TopFrontLeft
78	HFR				TopFrontRight
79	HFC			TopFrontCentre	TopFrontCentre
80	OhC			TopCentre	
81	HLS				TopSurroundLeft
82	HRS				TopSurroundRight
83	HSiL			TopSideLeft	TopSideLeft
84	HSiR			TopSideRight	TopSideRight
85	HBC			TopBackCentre	
86	BiFC			BottomFrontcentre	
87	BiFLmid			BottomFrontLeft	
88	BiFRmid			BottomFrontRight	
89	FLw			FrontLeft *3	
90	FRw			FrontRight *4	
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HBL				
96	HBR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid	TopFrontLeftMid	TopFrontLeftMid	TopFrontLeftMid	
106	HFRmid	TopFrontRightMid	TopFrontRightMid	TopFrontRightMid	
107	HBLmid	TopBackLeftMid	TopBackLeftMid	TopBackLeftMid	TopBackLeftMid
108	HBRmid	TopBackRightMid	TopBackRightMid	TopBackRightMid	TopBackRightMid
109	FLmid				
110	FRmid				
111	BLmid	BackLeftMid	BackLeftMid	Back left middle	
112	BRmid	BackRightMid	BackRightMid	Back right middle	
113	LFE2			LowFrequencyEffectsR	
					BackLeftMidDiffuse
					BackRightMidDiffuse
114	OhBC				
Channel assignment on display					
151	DL		FrontLeftScreen		
152	DR		FrontRightScreen		
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BiDL				
162	BiDR				
163	BiLc				
164	BiRc				
165	BiDC				
				Channel name in Recommendation *1: Front Left Centre *2: Front Right Centre *3: Front left *4: Font Right	

B.7 Comparison table between this document and ISO/IEC 23001-8

Table B.6 shows comparison table of the geometrical positions of the loudspeakers between this document and ISO/IEC 23001-8. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.6 – Comparison table between this document and ISO/IEC 23001-8 (1 of 3)

This document			ISO/IEC 23001-8					
Channel number	Channel label ID name	Full name of ID	Table 8 – Definition of loudspeaker index, OutputChannelPosition			Table 10 – Definition of LoudspeakerGeometry		
			Value	Abbr.	Name	Value	Azimuth (°)	Elevation (°)
65	FL	Front left	6	Lc	Left front centre	0	30	0
66	FR	Front right	7	Rc	Right front centre	1	-30	0
67	FC	Front centre	2	C	Centre front	2	0	0
68	LFE	Low frequency effects	3	LFE	Low frequency enhancement	3	0	-15
69	LS	Left surround	4	Ls	Left surround	4	110	0
70	RS	Right surround	5	Rs	Right surround	5	-110	0
71	FLc	Front left centre				6	22	0
72	FRc	Front right centre				7	-22	0
73	BC	Back centre	10	Cs	Rear centre	10	180	0
74	LFE1	Low frequency effects-1		LFE	Low frequency enhancement	26	45	-15
75	SiL	Side left	13	Lss	left side surround,	13	90	0
76	SiR	Side right	14	Rss	right side surround,	14	-90	0
77	HFL	High front left	17	Lv	Left front vertical height	17	30	35
78	HFR	High front right	18	Rv	Right front vertical height	18	-30	35
79	HFC	High front centre	19	Cv	Centre front vertical height	19	0	35
80	OhC	Overhead centre	25	Ts	Top centre surround	25	0	90
81	HLS	High left surround	30	Lvs	Left vertical height surround	30	110	35
82	HRS	High right surround	31	Rvs	Right vertical height surround	31	-110	35
83	HSiL	High side left	23	Lvss	Left vertical height side surround	23	90	35
84	HSiR	High side right	24	Rvss	Right vertical height side surround	24	-90	35
85	HBC	High back centre	22	Cvr	Centre vertical height rear	22	180	35
86	BfC	Bottom front centre	29	Cb	Centre front vertical bottom	29	0	-15
87	BfLmid	Bottom front left middle	27	Lb	Left front vertical bottom	27	45	-15
88	BfRmid	Bottom front right middle	28	Rb	Right front vertical bottom	28	-45	-15
89	FLw	Front left wide	0	L	Left front	15	60	0
90	FRw	Front right wide	1	R	Right front	16	-60	0
91	BL	Back left	8	Lsr	Rear surround left	41	150	0
92	BR	Back right	9	Rsr	Rear surround right	42	-150	0
93	LBS	Left back surround	11	Lsd	Left surround direct			
94	RBS	Right back surround	12	Rsd	Right surround direct			
95	HBL	High back left						
96	HBR	High back right						
97	HFLw	High front left wide	15	Lw	Left wide front			
98	HFRw	High front right wide	16	Rw	Right wide front			
99	OhFL	Overhead front left						
100	OhFR	Overhead front right						
101	OhSiL	Overhead side left						
102	OhSiR	Overhead side right						
103	OhBL	Overhead back left						
104	OhBR	Overhead back right						
105	HFLmid	High front left middle				32	45	35
106	HFRmid	High front right middle				33	-45	35
107	HBLmid	High back left middle	20	Lvr	Left surround vertical height rear	20	135	35
108	HBRmid	High back right middle	21	Rvr	Right surround vertical height rear	21	-135	35
109	FLmid	Front left middle				34	45	0
110	FRmid	Front right middle				35	-45	0
111	BLmid	Back left middle	8	Lsr	Rear surround left	8	135	0
112	BRmid	Back right middle	9	Rsr	Rear surround right	9	-135	0
113	LFE2	Low frequency effects-2	26	LFE2	Low frequency enhancement 2	26	45	-15
114	OhBC	Overhead back centre						
Channel assignment on Display								
151	DL	Display left	37	Leos	Left edge of screen	37		
152	DR	Display right	38	Reos	Right edge of screen	38		
153	DLc	Display Left centre	39	Hwbcsl	half-way btw. centre of display and left edge of display	39		
154	DRc	Display Right centre	40	Hwbcar	half-way btw. centre of display and right edge of display	40		
155	DC	Display centre						
156	HDL	High display left						
157	HDR	High display right						
158	HDLc	High display left centre						
159	HDRc	High display right centre						
160	HDC	High display centre						
161	BtDL	Bottom display left						
162	BtDR	Bottom display right						
163	BtLc	Bottom display left centre						
164	BtRc	Bottom display right centre						
165	BtDC	Bottom display centre						

Table B.6 (2 of 3)

This document		ISO/IEC 23001-8										
Channel number	Channel label ID name	Channel Configuration										
		0	1	2	3	4	5	6	7	8	9	10
65	FL			L	L	L	L	L	Lc		L	L
66	FR			R	R	R	R	R	Rc		R	R
67	FC		C		C	C	C	C	C			
68	LFE							LFE	LFE			
69	LS						Ls	Ls	Ls			Ls
70	RS						Rs	Rs	Rs			Rs
71	FLc											
72	FRc											
73	BC					Cs					Cs	
74	LFE1											
75	SiL											
76	SiR											
77	HFL											
78	HFR											
79	HFC											
80	OhC											
81	HLS											
82	HRS											
83	HSiL											
84	HSiR											
85	HBC											
86	BtFC											
87	BtFLmid											
88	BtFRmid											
89	FLw											
90	FRw											
91	BL											
92	BR											
93	LBS											
94	RBS											
95	HBL											
96	HBR											
97	HFLw											
98	HFRw											
99	OhFL											
100	OhFR											
101	OhSiL											
102	OhSiR											
103	OhBL											
104	OhBR											
105	HFLmid											
106	HFRmid											
107	HBLmid											
108	HBRmid											
109	FLmid								L			
110	FRmid								R			
111	BLmid											
112	BRmid											
113	LFE2											
114	OhBC											
Channel assignment on display												
151	DL											
152	DR											
153	DLc											
154	DRc											
155	DC											
156	HDL											
157	HDR											
158	HDLc											
159	HDRc											
160	HDC											
161	BtDL											
162	BtDR											
163	BtLc											
164	BtRc											
165	BtDC											
		any setup								N.A.		

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Dolby Atmos®, <https://www.dolby.com/us/en/guide/speaker-setup-guides/9.1.6-overhead-speaker-setup-guide.html>

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Audio, video and multimedia systems – General channel assignment
of multichannel audio**

**Systèmes audio, vidéo et multimédia – Affectation générale des voies
des systèmes audio à voies multiples**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

AUDIO, VIDEO AND MULTIMEDIA SYSTEMS –

GENERAL CHANNEL ASSIGNMENT OF MULTICHANNEL AUDIO

FOREWORD

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International Standard IEC 62574 has been prepared by technical area 20 of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) model of channel assignment spaces is changed;
- b) definition of channel maps and labels is changed;
- c) metadata is newly specified;
- d) channel maps and labels from the first edition are included in Annex A.

The text of this International Standard is based on the following documents:

CDV	Report on voting
100/3198/CDV	100/3246/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

There are many multichannel audio formats and there will be new formats. These formats have a specific channel assignment, such as a channel mapping and channel labels, but the basic channel assignments are not so different from each other. These can be unified to one common channel assignment as the general channel assignment. This general channel assignment provides audio devices and digital audio interfaces with the usage of unified channel assignments for any multichannel audio formats. This second edition provides consistency with various standards. The channel names have changed in this second edition; the differences are shown in Annex B. Since there are standards that refer to the first edition of this document (see Clause A.1), IEC 62574:2011 (the first edition) is cited at length in Annex A. The first edition (IEC 62574:2011) and the second edition (this document) can be distinguished by the numbering of the channels.

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AUDIO, VIDEO AND MULTIMEDIA SYSTEMS –

GENERAL CHANNEL ASSIGNMENT OF MULTICHANNEL AUDIO

1 Scope

This document specifies the general channel assignment and the metadata for multichannel audio format. This document, with its channel mapping and labelling content, provides the unified usage of channel assignments for source devices, digital audio interfaces and sink devices. The general channel assignment excludes the specification of the exact position of each loudspeaker. The metadata has the exact position of each loudspeaker; however, since the position of the loudspeaker is different in various surround sound formats, the position information of the metadata is not standardized. It is aimed at consumer applications; it is not targeted at theatrical environments. Up to 65 labels for loudspeaker positions and 15 labels for loudspeakers on the display are specified, which can be used for all current multichannel audio formats. The channel assignment concept is room centric and listener centric. This general channel assignment specifies the position of the loudspeaker as seen from the listener.

2 Normative reference

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

overhead layer

loudspeaker-layer located vertically above the high layer, nominally near or on the ceiling (overhead), labelled beginning with the letter designation "Oh"

3.2

high layer

loudspeaker-layer located vertically below the overhead layer and above the middle layer, nominally located above the screen, or near the ceiling, labelled beginning with the letter designation "H"

3.3

middle layer

loudspeaker-layer located nominally in the vertical plane at height of the listeners ears, or alternatively at the centre of the screen, whose labels do not carry a letter designation

3.4

bottom layer

loudspeaker-layer located nominally below the screen, or near the floor, labelled beginning with the letter designation "Bt"

3.5

front left

FL

loudspeaker position located at the front left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.6

front right

FR

loudspeaker position located at the front right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.7

front centre

FC

loudspeaker position located at frontal centre in the middle layer, or alternatively corresponding to the centre of the screen, as viewed from the seating area

Note 1 to entry: This note applies to the French language only.

3.8

low-frequency effects

LFE

sound effects in the low-frequency band, generally below 120 Hz; the LFE channel is not used as a subwoofer channel to compensate for the low-frequency band of each loudspeaker

Note 1 to entry: When mono LFE is used, it is conveyed in the LFE channel and the LFE loudspeaker's position at the bottom layer is not defined.

Note 2 to entry: This note applies to the French language only.

3.9

left surround

LS

loudspeaker position located at the left side slightly behind the listener in the middle layer

Note 1 to entry: This note applies to the French language only.

3.10

right surround

RS

loudspeaker position located at the right side slightly behind the listener in the middle layer

Note 1 to entry: This note applies to the French language only.

3.11

front left centre

FLc

loudspeaker position located at the front left of centre in the middle layer

Note 1 to entry: This note applies to the French language only.

3.12

front right centre

FRc

loudspeaker position located at the front right of centre in the middle layer

Note 1 to entry: This note applies to the French language only.

3.13**back centre****BC**

loudspeaker position located at centre back in the middle layer

Note 1 to entry: This note applies to the French language only.

3.14**low-frequency effects 1****LFE1**

LFE loudspeaker position located at the bottom layer and normally far left front

Note 1 to entry: This note applies to the French language only.

3.15**side left****SiL**

loudspeaker position located on the left side in the middle layer

Note 1 to entry: This note applies to the French language only.

3.16**side right****SiR**

loudspeaker position located on the right side in the middle layer

Note 1 to entry: This note applies to the French language only.

3.17**high front left****HFL**

loudspeaker position located at the front left in the high layer

Note 1 to entry: This note applies to the French language only.

3.18**high front right****HFR**

loudspeaker position located at the front right in the high layer

Note 1 to entry: This note applies to the French language only.

3.19**high front centre****HFC**

loudspeaker position located at front centre in the high layer

Note 1 to entry: This note applies to the French language only.

3.20**overhead centre****OhC**

loudspeaker position located at the centre in the overhead layer directly above the seating area

Note 1 to entry: This note applies to the French language only.

3.21**high left surround****HLS**

loudspeaker position located at the left slightly behind the listener in the high layer

Note 1 to entry: This note applies to the French language only.

3.22

high right surround

HRS

loudspeaker position located at the right slightly behind the listener in the high layer

Note 1 to entry: This note applies to the French language only.

3.23

high side left

HSiL

loudspeaker position located on the left side in the high layer

Note 1 to entry: This note applies to the French language only.

3.24

high side right

HSiR

loudspeaker position located on the right side in the high layer

Note 1 to entry: This note applies to the French language only.

3.25

high back centre

HBC

loudspeaker position located at centre back in the high layer

Note 1 to entry: This note applies to the French language only.

3.26

bottom front centre

BtFC

loudspeaker position located at centre front in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.27

bottom front left middle

BtFLmid

loudspeaker position located at the front left in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.28

bottom front right middle

BtFRmid

loudspeaker position located at the front right in the bottom layer

Note 1 to entry: This note applies to the French language only.

3.29

front left wide

FLw

loudspeaker position located at the front far left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.30

front right wide

FRw

loudspeaker position located at the far front right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.31**back left****BL**

loudspeaker position located at the back left in the middle layer

Note 1 to entry: This note applies to the French language only.

3.32**back right****BR**

loudspeaker position located at the back right in the middle layer

Note 1 to entry: This note applies to the French language only.

3.33**left back surround****LBS**

loudspeaker position located halfway between LS and BL in the middle layer

Note 1 to entry: This note applies to the French language only.

3.34**right back surround****RBS**

loudspeaker position located halfway between RS and BR in the middle layer

Note 1 to entry: This note applies to the French language only.

3.35**high back left****HBL**

loudspeaker position located at the back left in the high layer

Note 1 to entry: This note applies to the French language only.

3.36**high back right****HBR**

loudspeaker position located at the back right in the high layer

Note 1 to entry: This note applies to the French language only.

3.37**high front left wide****HFLw**

loudspeaker position located at the front far left in the high layer

Note 1 to entry: This note applies to the French language only.

3.38**high front Right wide****HFRw**

loudspeaker position located at the far front right in the high layer

Note 1 to entry: This note applies to the French language only.

3.39**overhead front left****OhFL**

loudspeaker position located at the front left in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.40

overhead front right

OhFR

loudspeaker position located at the front right in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.41

overhead side left

OhSiL

loudspeaker position located on the left side in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.42

overhead side right

OhSiR

loudspeaker position located on the right side in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.43

overhead back left

OhBL

loudspeaker position located at the back left in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.44

overhead back right

OhBR

loudspeaker position located at the back right in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.45

high front left middle

HFLmid

loudspeaker position located at the front left middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.46

high front right middle

HFRmid

loudspeaker position located at the front right middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.47

high back left middle

HBLmid

loudspeaker position located at the back left middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.48

high back right middle

HBRmid

loudspeaker position located at the back right middle in the high layer

Note 1 to entry: This note applies to the French language only.

3.49**front left middle****FLmid**

loudspeaker position located at the front left middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.50**front right middle****FRmid**

loudspeaker position located at the front right middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.51**back left middle****BLmid**

loudspeaker position located at the back left middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.52**back right middle****BRmid**

loudspeaker position located at the back right middle in the middle layer

Note 1 to entry: This note applies to the French language only.

3.53**low frequency effects 2****LFE2**

LFE loudspeaker position located at the bottom layer and normally far right front, when LFE1 is used

Note 1 to entry: This note applies to the French language only.

3.54**overhead back centre****OhBC**

loudspeaker position located at the back centre in the overhead layer

Note 1 to entry: This note applies to the French language only.

3.55**display left****DL**

loudspeaker position located at the left edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.56**display right****DR**

loudspeaker position located at the right edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.57**display left centre****DLC**

loudspeaker position located halfway between the centre of the display and the left edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.58

display right centre

DRc

loudspeaker position located halfway between the centre of the display and the right edge of the middle level on display

Note 1 to entry: This note applies to the French language only.

3.59

display centre

DC

loudspeaker position located at the centre of the display

Note 1 to entry: This note applies to the French language only.

3.60

high display left

HDL

loudspeaker position located at the left edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.61

high display right

HDR

loudspeaker position located at the right edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.62

high display left centre

HDLc

loudspeaker position located halfway between the centre of the display and the left edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.63

high display right centre

HDRc

loudspeaker position located halfway between the centre of the display and the right edge of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.64

high display centre

HDC

loudspeaker position located at the centre of the high level on the display

Note 1 to entry: This note applies to the French language only.

3.65

bottom display left

BtDL

loudspeaker position located at the left edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.66**bottom display right****BtDR**

loudspeaker position located at the right edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.67**bottom display left centre****BtDLc**

loudspeaker position located halfway between the centre of the display and left edge of the bottom level on display

Note 1 to entry: This note applies to the French language only.

3.68**bottom display right centre****BtDRc**

loudspeaker position located halfway between the centre of the display and the right edge of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.69**bottom display centre****BtDC**

loudspeaker position located at the centre of the bottom level on the display

Note 1 to entry: This note applies to the French language only.

3.70**channel assignment**

assignment of multichannel audio format including speaker configuration, loudspeaker setup, channel name, channel label, channel ID, and channel order for transmission and recording

Note 1 to entry: The channel assignment excludes the specification of the exact position of each loudspeaker.

3.71**channel assignment on display**

channel assignment for loudspeakers on the screen

Note 1 to entry: "Loudspeaker on screen" is defined as "on display".

3.72**channel number**

numbering of each channel

3.73**channel label ID**

label of ID

3.74**speaker configuration**

information about number of overhead speakers, number of high speakers, number of middle speakers, number of bottom speakers and number of LFE speakers

Note 1 to entry: "Speaker" and "speaker configuration" both mean loudspeaker.

Note 2 to entry: Examples of speaker configuration: stereo is described as 0.0.2.0.0, 5.1ch as 0.0.5.0.1 and 22.2ch as 1.8.10.3.2.

3.75

loudspeaker position

information of loudspeaker position shown by azimuth, elevation and distance

3.76

direction of loudspeaker

centre direction of response pattern indicated by azimuth and tilt

3.77

directional response pattern

directional response pattern for loudspeaker

Note 1 to entry: Refer to IEC 60268-5.

3.78

frequency range

span from the lowest frequency to the highest frequency over which a loudspeaker is, or should be, capable of satisfactory sound reproduction

3.79

subwoofer

loudspeaker for low-frequency sound reproduction

3.80

dialogue

information for commentary (speech)

3.81

screen

surface on which a picture appears, located in front of the listener in the middle layer

4 General channel assignment

4.1 General

The channel assignment specifies the channels of multichannel audio; the loudspeaker assignment specifies the geometrical positions of the loudspeaker.

4.2 Model

Figure 1 shows the model of channel assignment spaces with the four layers, and a listener is located in the centre of the bottom layer. The middle layer is located at the vertical centre of the picture screen or, alternatively, at the same height as the height of a listener's ear.

This model specifies the general channel assignments in these four layers, which are the overhead layer, the high layer, the middle layer and the bottom layer. Each layer specifies channels in its layer.

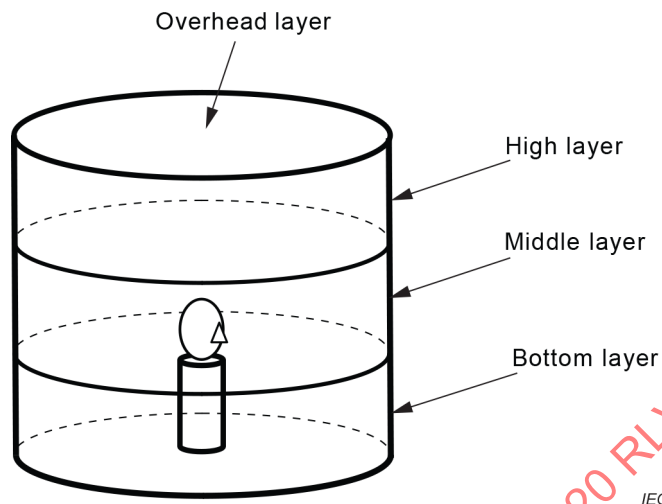
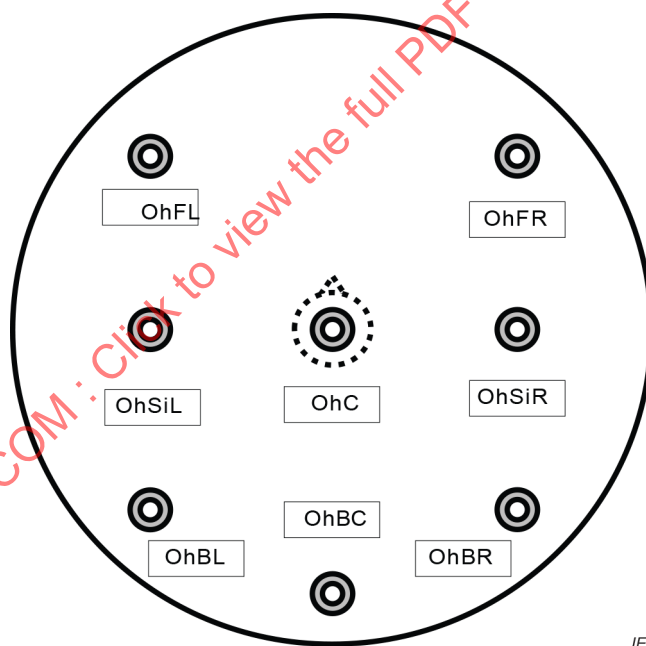
**Figure 1 – Model of channel spaces**

Figure 2 shows the overhead layer with its channel assignments, Figure 3 shows the high layer with its channel assignments, Figure 4 shows the middle layer with its channel assignments, Figure 5 shows the bottom layer with its channel assignments, and Figure 6 shows the channel assignments on the display.

**Figure 2 – Overhead layer**

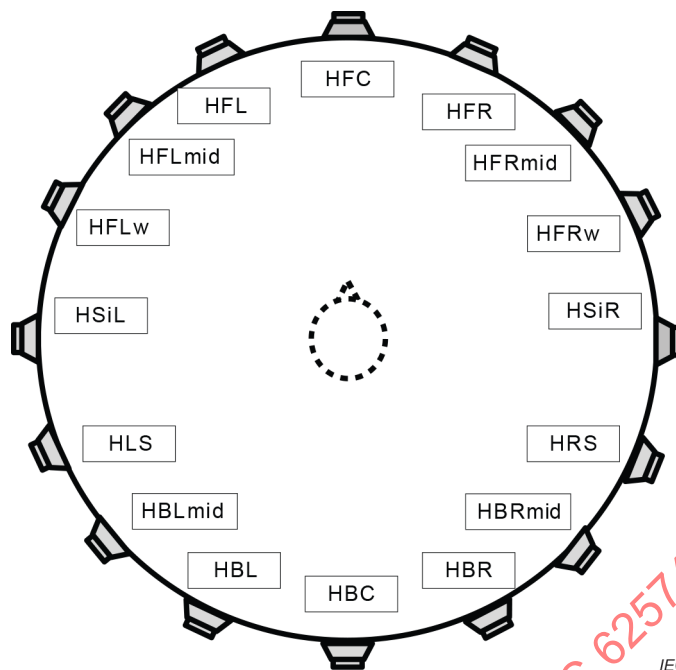


Figure 3 – High layer

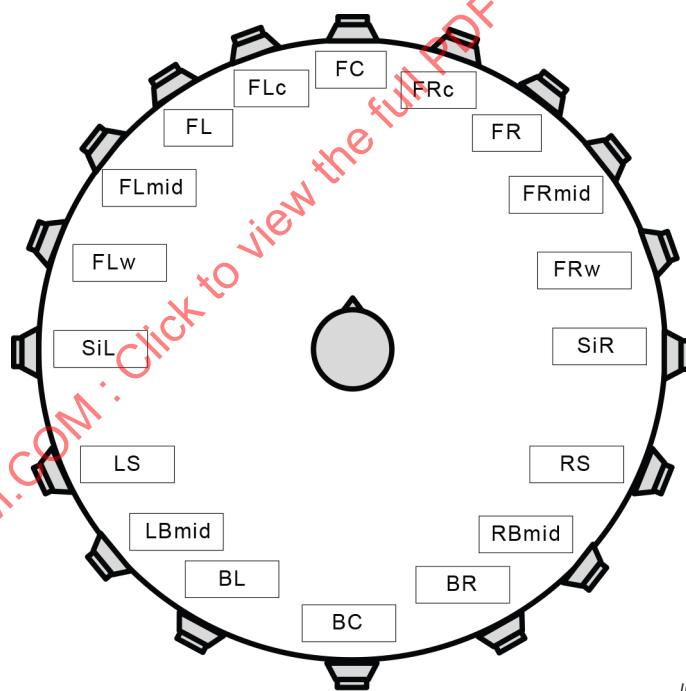


Figure 4 – Middle layer

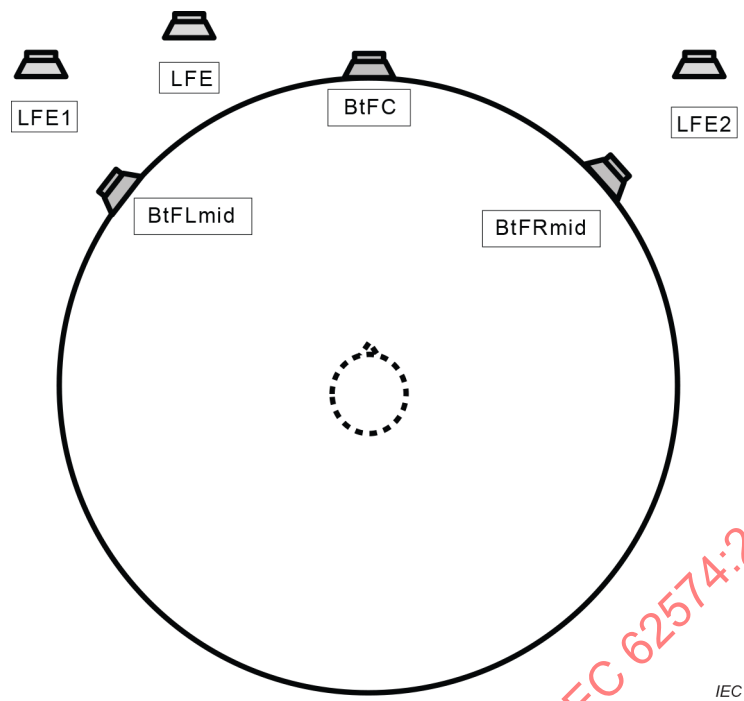


Figure 5 – Bottom layer

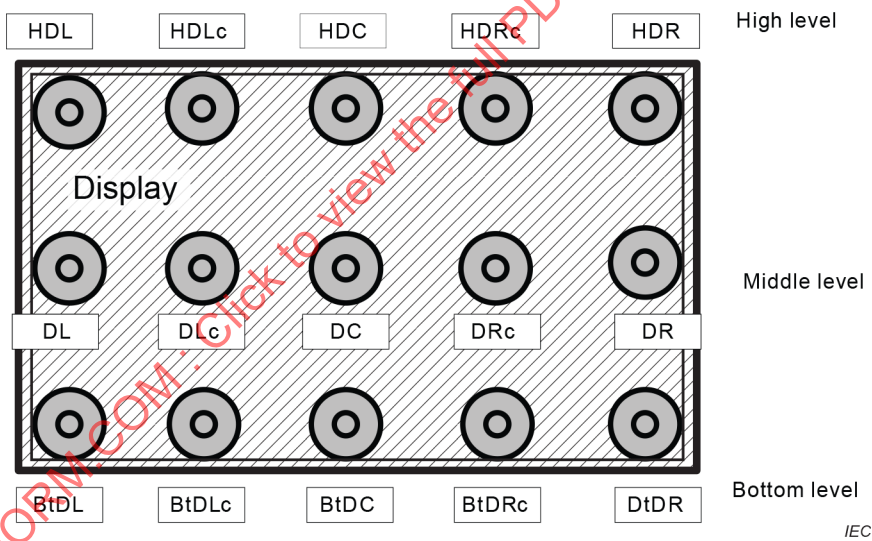


Figure 6 – Channel assignment on the display

4.3 Channel maps and labels

Table 1 shows the definition of channel maps and labels of the general channel assignments. The channel label has an ID name as an abbreviation label for each channel label. Each name is case sensitive.

Table 1 – General channel assignment

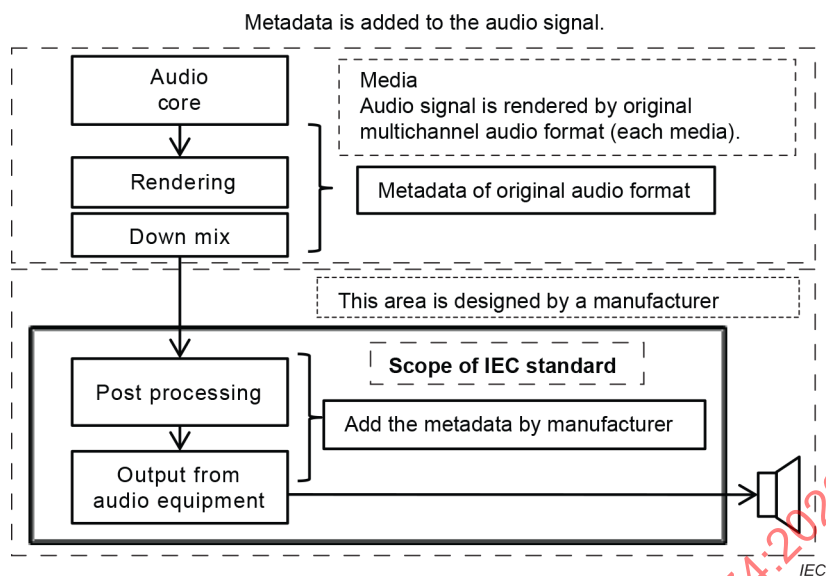
Layer	Channel number	Channel label ID name	Full name of ID
Middle	65	FL	Front left
Middle	66	FR	Front right
Middle	67	FC	Front centre
Bottom	68	LFE	Low frequency effects
Middle	69	LS	Left surround
Middle	70	RS	Right surround
Middle	71	FLc	Front left centre
Middle	72	FRc	Front right centre
Middle	73	BC	Back centre
Bottom	74	LFE1	Low frequency effects 1
Middle	75	SiL	Side left
Middle	76	SiR	Side right
High	77	HFL	High front left
High	78	HFR	High front right
High	79	HFC	High front centre
Overhead	80	OhC	Overhead centre
High	81	HLS	High left surround
High	82	HRS	High right surround
High	83	HSiL	High side left
High	84	HSiR	High side right
High	85	HBC	High back centre
Bottom	86	BtFC	Bottom front centre
Bottom	87	BtFLmid	Bottom front left middle
Bottom	88	BtFRmid	Bottom front right middle
Middle	89	FLw	Front left wide
Middle	90	FRw	Front right wide
Middle	91	BL	Back left
Middle	92	BR	Back right
Middle	93	LBS	Left back surround
Middle	94	RBS	Right back surround
High	95	HBL	High back left
High	96	HBR	High back right
High	97	HFLw	High front left wide
High	98	HFRw	High front right wide
Overhead	99	OhFL	Overhead front left
Overhead	100	OhFR	Overhead front right
Overhead	101	OhSiL	Overhead side left
Overhead	102	OhSiR	Overhead side right
Overhead	103	OhBL	Overhead back left
Overhead	104	OhBR	Overhead back right
High	105	HFLmid	High front left middle
High	106	HFRmid	High front right middle

Layer	Channel number	Channel label ID name	Full name of ID
High	107	HBLmid	High Back left middle
High	108	HBRmid	High front right wide
Middle	109	FLmid	Front left middle
Middle	110	FRmid	Front right middle
Middle	111	BLmid	Back left middle
Middle	112	BRmid	Back right middle
Bottom	113	LFE2	Low frequency effects-2
Overhead	114	OhBC	Overhead back centre
Channel assignment on the display			
Display	151	DL	Display left
Display	152	DR	Display right
Display	153	DLc	Display left centre
Display	154	DRc	Display right centre
Display	155	DC	Display centre
Display	156	HDL	High display left
Display	157	HDR	High display right
Display	158	HDLc	High display left centre
Display	159	HDRc	High display right centre
Display	160	HDC	High display centre
Display	161	BtDL	Bottom display left
Display	162	BtDR	Bottom display right
Display	163	BtDLc	Bottom display left centre
Display	164	BtDRc	Bottom display right centre
Display	165	BtDC	Bottom display centre
NOTE Many multichannel audio formats have the original channel name. They are not same as each format. Table B.1 shows a comparison chart with the channel name of IEC 62574:2011.			

5 Metadata

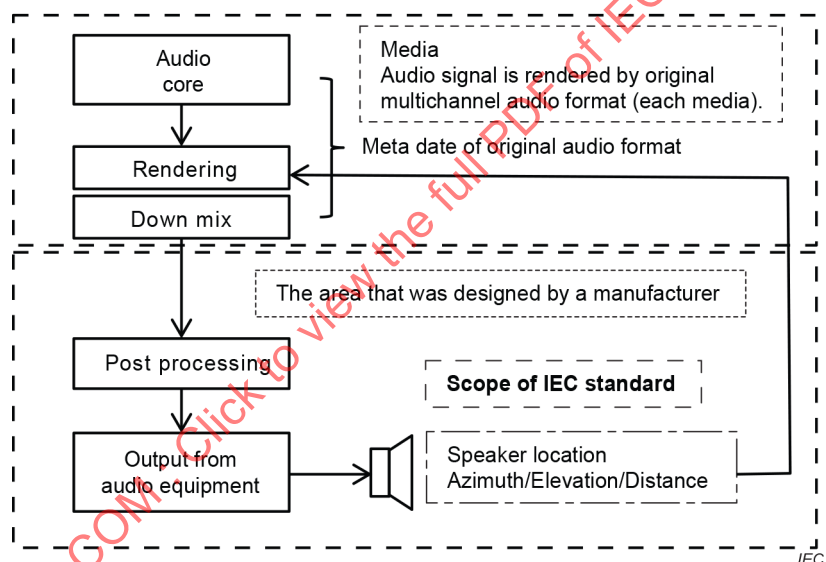
5.1 General

Metadata carries information on the speaker configuration of the multichannel audio format and other necessary information to reproduce its audio signal properly. The scope of metadata does not include the information of the rendering and the broadcast. If the manufacturer adds metadata to the rendered signal, it is possible to obtain correct channel information for post processing. For example, if the optional virtual surround system can obtain correct speaker information for the rendered signal, correct compatibility is obtained (see Figure 7a). If there is accurate speaker position information, the ideal reproduced sound can be rendered (see Figure 7b).



a) Information for channel assignment

Metadata shows the position of loudspeaker



b) Information of the location for loudspeaker

Figure 7 – Scope of metadata

5.2 Metadata list

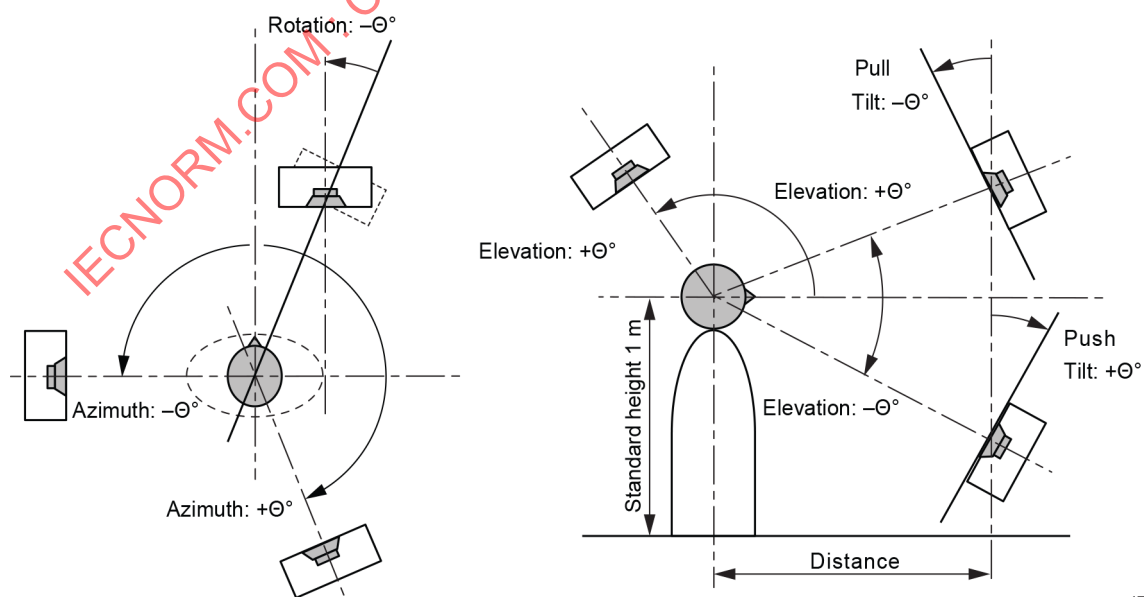
The specification of metadata is shown in Table 2.

Table 2 – Metadata

Metadata	Contents	Unit
Channel number	Number	number
Channel label ID	Name	ASCII
Speaker configuration e.g. Stereo is described as 0.0.2.0.0, 5.1ch as 0.0.5.0.1 and 22.2ch as 1.8.10.3.2	Overhead speaker	Quantity
	High speakers	Quantity
	Middle speakers	Quantity
	Bottom speakers	Quantity
	Subwoofer (LFE)	Quantity
Loudspeaker position	Azimuth	degree
	Elevation	degree
	Distance	cm
	Source or Sink	ASCII
Direction of loudspeaker	Rotation	degree
	Tilt	degree
	Directional response pattern	degree
Frequency range	Low-end frequency	Hz
	High-end frequency	Hz
Dialogue	Source	Commentary
LFE	LFE playback level	dB

5.3 Definition of loudspeaker position

Measurement of loudspeaker shall be done as shown in Figure 8. The actual loudspeaker position is indicated by azimuth, elevation and tilt. The value shows metadata in loudspeaker position and direction of loudspeaker. Definition of loudspeaker angle is shown in Table 3, and this table shows the range of each angle.



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Figure 8 – Loudspeaker location

Table 3 – Definition of loudspeaker angle

Loudspeaker position			Direction of loudspeaker		
Azimuth	right → plus	0 → +180°	Rotation	right → plus	0 → +90°
	left → minus	0 → -180°		left → minus	0 → -90°
Elevation	up → plus	0 → +180°	Tilt	push → plus	0 → +90°
	down → minus	0 → -90°		pull → minus	0 → -90°

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Annex A (normative)

Channel maps and labels in edition 1

A.1 General

Many standards used the channel maps and labels in IEC 62574:2011. However, there are cases where BL, BR and LS, RS are used in reverse from other standards. Channel numbers 1 to 32 are referred to in IEC 62574:2011. Clauses A.2 and A.3 are copied from IEC 62574:2011.

NOTE 1 This document is consistent with 5.1 specified by ITU-R BS.775-3 and maintains legacy compatibility. BL, BR and LS, LR of IEC 62574:2011 are different from ITU-R BS.775-3. In this document, BL, BR and LS, LR were placed in the same position as ITU-R BS.775-3.

NOTE 2 The following standards refer to IEC 62574:2011.

- ARIB STD-B59, ISO/IEC 23001-8, ITU-R BS.2159-7
- The Institute of Image Information and Television Engineers; Standard test materials for three-dimensional multichannel stereophonic sound system - Series A

A.2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE The general sequence of position labels is used: height, front/back, left/centre/right. Absence of a height letter indicates the middle layer. The other two planes are always indicated. See also Table A.1.

A.2.1

top layer

top (highest) layer of three loudspeaker layers located at the top of the screen, alternatively at the top of the room; loudspeaker channels of the top layer are annotated with the letters Tp

A.2.2

middle layer

middle layer of three loudspeaker layers located at the vertical centre of the TV screen, alternatively at the same height as the height of viewer's ear

A.2.3

bottom layer

bottom (lowest) layer of three loudspeaker layers located at the bottom of the TV screen, alternatively at floor level of the room; loudspeaker channels of the bottom layer are annotated with the letters Bt

A.2.4

front left

FL

loudspeaker position located at far left and centred vertically of the middle layer

A.2.5

front right

FR

loudspeaker position located at far right and centred vertically of the middle layer

A.2.6
front centre
FC

loudspeaker position located in the middle layer corresponding to the centre of the TV screen, as viewed from the seating area

A.2.7
low frequency effects
LFE

carry only sound effects in low-frequency band, generally below 120 Hz; the LFE channel is not used as a subwoofer channel to compensate for the low-frequency band of each loudspeaker

A.2.8
low frequency effects 1
LFE1

LFE loudspeaker position located at the bottom layer

Note 1 to entry: When mono LFE is used, it is conveyed in the LFE1 channel and the LFE1 loudspeaker position at the bottom layer is not defined. When LFE2 is also used, the LFE1 loudspeaker position is normally located far left front at the bottom layer.

A.2.9
back left
BL

loudspeaker position located at far left back of the middle layer

A.2.10
back right
BR

loudspeaker position located at far right back of the middle layer

A.2.11
front left centre
FLc

loudspeaker position located mid-way between the front centre and front left of the middle layer

A.2.12
front right centre
FRc

loudspeaker position located mid-way between the front centre and front right of the middle layer

A.2.13
back centre
BC

loudspeaker position located at centre back of the middle layer

A.2.14
low frequency effects 2
LFE2

LFE loudspeaker position located at the bottom layer and normally far right front

A.2.15
side left
SiL

loudspeaker position located on the left of the middle layer

A.2.16**side right****SiR**

loudspeaker position located on the right of the middle layer

A.2.17**top front left****TpFL**

loudspeaker position located at far left front of the top layer

A.2.18**top front right****TpFR**

loudspeaker position located at far right front of the top layer

A.2.19**top front centre****TpFC**

loudspeaker position located at centre front of the top layer

A.2.20**top centre****TpC**

loudspeaker position located at the centre of the top layer directly above the seating area

A.2.21**top back left****TpBL**

loudspeaker position located at far left back of the top layer

A.2.22**top back right****TpBR**

loudspeaker position located at far right back of the top layer

A.2.23**top side left****TpSiL**

loudspeaker position located on the left of the top layer

A.2.24**top side right****TpSiR**

loudspeaker position located on the right of the top layer

A.2.25**top back centre****TpBC**

loudspeaker position located at centre back of the top layer

A.2.26**bottom front centre****BtFC**

loudspeaker position located at centre front of the bottom layer

A.2.27

bottom front left

BtFL

loudspeaker position located at far left front of the bottom layer

A.2.28

bottom front right

BtFR

loudspeaker position located at far right front of the bottom layer

A.2.29

front left wide

FLw

loudspeaker position located at front left end in the room in the middle layer

A.2.30

front right wide

FRw

loudspeaker position located at front right end in the room in the middle layer

A.2.31

left surround

LS

array of loudspeakers positioned along the left side of the middle layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.32

right surround

RS

array of loudspeakers positioned along the right side of the middle layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.33

left surround direct

LSd

loudspeaker position located on the left wall of the middle layer for localized directionality as opposed to the diffuse array

A.2.34

right surround direct

RSd

loudspeaker position located on the right wall of the middle layer for localized directionality as opposed to the diffuse array

A.2.35

top left surround

TpLS

array of loudspeakers positioned along the right side of the top layer starting approximately 1/3 of the distance from the screen to the back wall

A.2.36

top right surround

TpRS

array of loudspeakers positioned along the right side of the top layer starting approximately 1/3 of the distance from the screen to the back wall

A.3 General channel assignment

A.3.1 General

The channel assignment specifies the channels of multichannel audio, the loudspeaker assignment is the loudspeaker position of its channels.

A.3.2 The model

Figure A.1 shows the model, in IEC 62574:2011, of channel assignment spaces with the three layers, and a listener is located in the centre of the bottom layer. The middle layer is located at the vertical centre of the picture screen or alternatively at the same height as the height of a listener's ear.

This model specifies the general channel assignments in these three layers, which are the top layer, the middle layer and the bottom layer. Each layer specifies channels in its layer.

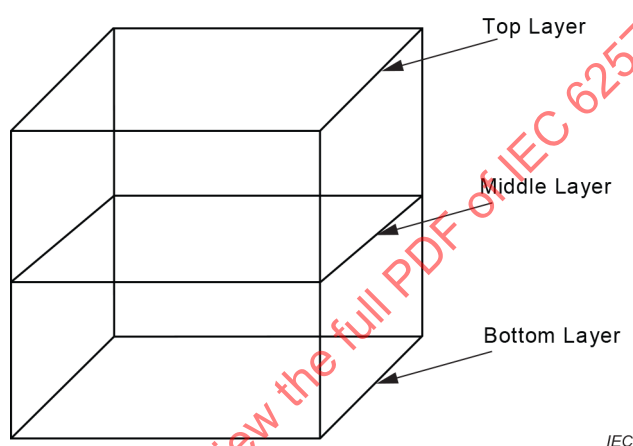


Figure A.1 – Model of channel spaces

Figure A.2 shows the top layer with its channel assignments, Figure A.3 shows the middle layer with its channel assignments and Figure A.4 shows the bottom layer with its channel assignments in IEC 62574:2011.

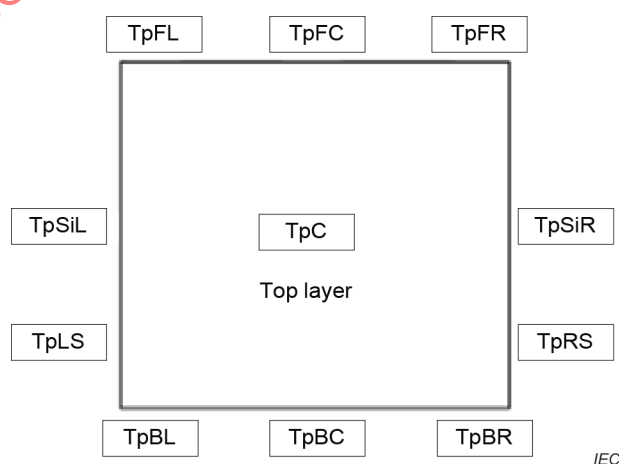


Figure A.2 – Top layer

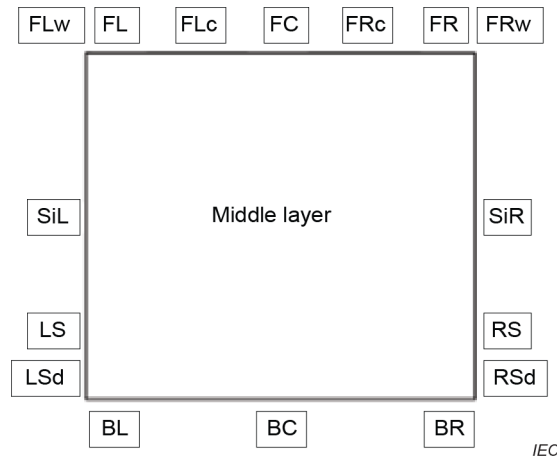


Figure A.3 – Middle layer

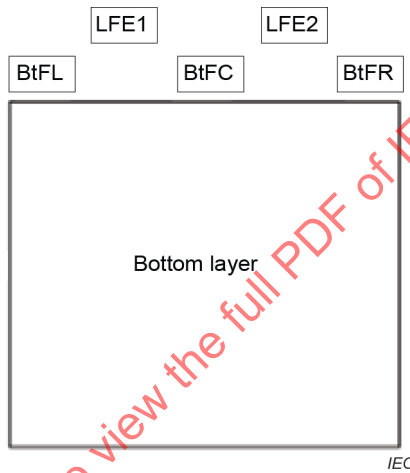


Figure A.4 – Bottom layer

A.4 Channel maps and labels

Table A.1 shows the definition of channel maps and labels of the general channel assignments in IEC 62574:2011. The channel label has an ID name as abbreviation label for each channel label. Each name is case sensitive.

Table A.1 – General channel assignment table in IEC 62574:2011

Channel number	Channel label ID name	Full name of ID
1/2	FL/FR	Front Left/Front Right
3/4	FC/LFE1	Front Centre/Low Frequency Effects-1
5/6	BL/BR	Back Left/Back Right
7/8	FLc/FRc	Front Left centre/Front Right centre
9/10	BC/LFE2	Back Centre/Low Frequency Effects-2
11/12	SiL/SiR	Side Left/Side Right
13/14	TpFL/TpFR	Top Front Left/Top Front Right
15/16	TpFC/TpC	Top Front Centre/Top Centre
17/18	TpBL/TpBR	Top Back Left/Top Back Right
19/20	TpSiL/TpSiR	Top Side Left/Top Side Right
21/22	TpBC/BtFC	Top Back Centre/Bottom Front Centre
23/24	BtFL/BtFR	Bottom Front Left/Bottom Front Right
25/26	FLw/FRw	Front Left wide/Front Right wide
27/28	LS/RS	Left Surround/Right Surround
29/30	LSd/RSd	Left Surround direct/Right Surround direct
31/32	TpLS/TpRS	Top Left Surround/Top Right Surround

Annex B (informative)

Comparison table

B.1 General

This annex is a comparison chart of loudspeaker positions between IEC and other multichannel audio formats. The same channel name may not be in the same position depending on the multichannel audio format. These tables help in understanding the compatibility of each multichannel audio format.

B.2 Comparison table for each edition of IEC 62574

Table B.1 is a comparison table between edition 1 and edition 2 (this document) of IEC 62574.

Table B.1 – Comparison table for each edition of IEC 62574

IEC 62574 Ed1			IEC 62574 Ed2 (this document)			
Channel number	Channel label ID name	Full name of ID	Layer	Channel number	Channel label ID name	Full name of ID
7	FLc	Front left centre	Middle	65	FL	Front left
8	FRc	Front right centre	Middle	66	FR	Front right
3	FC	Front centre	Middle	67	FC	Front centre
4	LFE1	Low frequency effects-1	Bottom	68	LFE	Low frequency effects
27	LS	Left surround	Middle	69	LS	Left surround
28	RS	Right surround	Middle	70	RS	Right surround
			Middle	71	FLc	Front left centre
			Middle	72	FRc	Front right centre
9	BC	Back centre	Middle	73	BC	Back centre
(4)	LFE1	Low frequency effects-1	Bottom	74	LFE1	Low frequency effects-1
11	SiL	Side left	Middle	75	SiL	Side left
12	SiR	Side right	Middle	76	SiR	Side right
13	TpFL	Top front left	High	77	HFL	High front left
14	TpFR	Top front right	High	78	HFR	High front right
15	TpFC	Top front centre	High	79	HFC	High front centre
16	TpC	Top centre	Over head	80	OhC	Overhead centre
31	TpLS	Top left surround	High	81	HLS	High left surround
32	TpRS	Top right surround	High	82	HRS	High right surround
19	TpSiL	Top side left	High	83	HSiL	High side left
20	TpSiR	Top side right	High	84	HSiR	High side right
21	TpBC	Top back centre	High	85	HBC	High back centre
22	BtFC	Bottom front centre	Bottom	86	BtFC	Bottom front centre
23	BtFL	Bottom front left	Bottom	87	BtFL	Bottom front left
24	BtFR	Bottom front right	Bottom	88	BtFR	Bottom front right
1	FL	Front left	Middle	89	FLw	Front left wide
2	FR	Front right	Middle	90	FRw	Front right wide
5	BL	Back left	Middle	91	BL	Back left
6	BR	Back right	Middle	92	BR	Back right
29	LSd	Left surround direct	Middle	93	LBS	Left back surround
30	RSd	Right surround direct	Middle	94	RBS	Right back surround
17	TpBL	Top back left	High	95	HBL	High back left
18	TpBR	Top back right	High	96	HBR	High back right
25	FLw	Front left wide	No assignment in edition 2, "FLw and FRw" of edition 1 are room centric.			
26	FRw	Front right wide				
			High	97	HL	High left
			High	98	HR	High right
			Overhead	99	OhFL	Overhead front left
			Overhead	100	OhFR	Overhead front right
			Overhead	101	OhSiL	Overhead side left
			Overhead	102	OhSiR	Overhead side right
			Overhead	103	OhBL	Overhead back left
			Overhead	104	OhBR	Overhead back right
			High	105	HFLmid	high front left middle
			High	106	HFRmid	high front right middle
			High	107	HBLmid	high Back left middle
			High	108	HBRmid	high Back right wide

IEC 62574 Ed1			IEC 62574 Ed2 (this document)			
Channel number	Channel label ID name	Full name of ID	Layer	Channel number	Channel label ID name	Full name of ID
			Middle	109	FLmid	Front left middle
			Middle	110	FRmid	Front right middle
			Middle	111	BLmid	Back left middle
			Middle	112	BRmid	Back right middle
10	LFE2	Low frequency effects-2	Bottom	113	LFE2	Low frequency effects-2
The difference between Ed 1 and Ed 2 – It matches the definition of the position of BL / BR and LS / LR of ITU - R. – Moves BL / BR of channel number 5/6 to channel number 91/92. – Moves BL / BR of channel number 27/28 to channel number 69/70. – The other positional relationship is the same between Ed 1 and Ed 2. – Top layer has been renamed to High layer and "Overhead". – Added 97 ~ 165. – The azimuth of FL/FR in edition 1 is almost the same as FLw/FRw in edition 2. – The azimuth of FL/FR in edition 2 is almost the same as FLc/FRc in edition 1.			Overhead	114	OhBC	Overhead back centre
			Channel assignment on Display			
			Display	151	DL	Display left
			Display	152	DR	Display right
			Display	153	DLc	Display left centre
			Display	154	DRc	Display right centre
			Display	155	DC	Display centre
			Display	156	HDL	High display left
			Display	157	HDR	High display right
			Display	158	HDLc	High display left centre
			Display	159	HDRc	High display right centre
			Display	160	HDC	High display centre
			Display	161	BtDL	Bottom display left
			Display	162	BtDR	Bottom display right
			Display	163	BtDLc	Bottom display left centre
			Display	164	BtDRc	Bottom display right centre
			Display	165	BtDC	Bottom display centre

B.3 Comparison table for numbering of the channel

Table B.2 shows the order of numbering for the channel number, audio channel format ID and value. There is no relation in the numbering between each standard.

Table B.2 – Comparison table for numbering of the channel

IEC 62574 Ed1		IEC 62574 Ed2 (this document)		ETSI TS 103 420		ITU-R BS.2094-1		ISO/IEC 23001-8 (Table 8)	
Channel number	Channel label ID name	Channel number	Channel label ID name	AudioChannel FormatID	Speaker label(s)	AudioChannel FormatID	Speaker label(s)	Value	Abbr.
7	FLc	65	FL	AC_00011001	RC_L	AC_00010001	M+030	6	Lc
8	FRc	66	FR	AC_00011002	RC_R	AC_00010002	M-030	7	Rc
3	FC	67	FC	AC_00011003	RC_C	AC_00010003	M+000	2	C
4	LFE1	68	LFE	AC_00011004	RC_LFE	AC_00010004	LFE		
27	LS	69	LS	AC_00011005	RC_LSS	AC_00010005	M+110	4	Ls
28	RS	70	RS	AC_00011006	RC_RSS	AC_00010006	M-110	5	Rs
		71	FLc			AC_00010007	M+022		
		72	FRc			AC_00010008	M-022		
9	BC	73	BC			AC_00010009	M+180	10	Cs
(4)	LFE1	74	LFE1	AC_00011004	RC_LFE	AC_00010020	LFE1	3	LFE
11	SiL	75	SiL			AC_0001000a	M+090	13	Lss
12	SiR	76	SiR			AC_0001000b	M-090	14	Rss
13	TpFL	77	HFL	AC_00011009	RC_LFH	AC_0001000d	U+030	17	Lv
14	TpFR	78	HFR	AC_0001100a	RC_RFH	AC_0001000f	U-030	18	Rv
15	TpFC	79	HFC			AC_0001000e	U+000	19	Cv
16	TpC	80	OhC			AC_0001000c	T+000	25	Ts
31	TpLS	81	HLS	AC_0001100d	RC_LRH	AC_00010010	U+110	30	Lvs
32	TpRS	82	HRS	AC_0001100e	RC_RRH	AC_00010012	U-110	31	Rvs
19	TpSiL	83	HSiL	AC_0001100b	RC_LTM	AC_00010013	U+090	23	Lvss
20	TpSiR	84	HSiR	AC_0001100c	RC_RTM	AC_00010014	U-090	24	Rvss
21	TpBC	85	HBC			AC_00010011	U+180	22	Cvr
22	BiFC	86	BiFC			AC_00010015	B+000	29	Cb
23	BiFL	87	BiFL			AC_00010016	B+045	27	Lb
24	BiFR	88	BiFR			AC_00010017	B-045	28	Rb
1	FL	89	FLw	AC_0001100f	RC_LW	AC_00010018	M+060	0	L
2	FR	90	FRw	AC_00011010	RC_RW	AC_00010019	M-060	1	R
5	BL	91	BL	AC_00011007	RC_LRS			8	Lsr
6	BR	92	BR	AC_00011008	RC_RRS			9	Rsr
29	LSd	93	LBS					11	Lsd
30	RSd	94	RBS					12	Rsd
17	TpBL	95	HBL						
18	TpBR	96	HBR						
25	FLw							15	Lw
26	FRw							16	Rw

IEC 62574 Ed1		IEC 62574 Ed2 (this document)		ETSI TS 103 420		ITU-R BS.2094-1		ISO/IEC 23001-8 (Table 8)	
Channel number	Channel label ID name	Channel number	Channel label ID name	AudioChannel FormatID	Speaker label(s)	AudioChannel FormatID	Speaker label(s)	Value	Abbr.
		97	HL						
		98	HR						
		99	OhFL						
		100	OhFR						
		101	OhSiL						
		102	OhSiR						
		103	OhBL						
		104	OhBR						
		105	HFLmid			AC_00010022	U+045		
		106	HFRmid			AC_00010023	U-045		
		107	HBLmid			AC_0001001e	U+135	20	Lvr
		108	HBRmid			AC_0001001f	U-135	21	Rvr
		109	FLmid			AC_00010026	M+045		
		110	FRmid			AC_00010027	M-045		
		111	BLmid			AC_0001001c	M+135	8	Lsr
		112	BRmid			AC_0001001d	M-135	9	Rsr
10	LFE2	113	LFE2	AC_00011011	RC_LFE2	AC_00010021	LFE2	26	LFE2
						AC_0001001a	M+135_Diff		
						AC_0001001b	M-135_Diff		
		114	OhBC			AC_00010028	UH+180		
Channel assignment on Display									
		151	DL			AC_00010024	M+SC	37	Leos
		152	DR			AC_00010025	M-SC	38	Reos
		153	DLc					39	Hwbcsl
		154	DRc					40	Hwbcar
		155	DC						
		156	HDL						
		157	HDR						
		158	HDLc						
		159	HDRc						
		160	HDC						
		161	BtDL						
		162	BtDR						
		163	BtDLc						
		164	BtDRc						
		165	BtDC						

B.4 Comparison table for surround sound amplifier in consumer market

Table B.3 shows comparison table for surround sound of amplifier in consumer market. The angle of azimuth for loudspeaker position is shown in Figure 8 of this document.

Table B.3 – Comparison table for surround sound amplifier in consumer market
(1 of 3)

This document			Auro-3D® ¹ Home Theater Setup			
Channel number	Channel label ID name	Full name of ID	Abbrev	Speaker	Azimuth (°) Nominal (Range)	Elevation (°) Nominal (Range)
65	FL	Front left	L	Left	-30 (22-40)	0 (0-10)
66	FR	Front right	R	Right	30 (22-40)	0 (0-10)
67	FC	Front centre	C	centre	0	0 (0-10)
68	LFE	Low frequency effects	LFE	Low Frequency Enhancement		
69	LS	Left surround	Ls	Left Surround	-110 (90-135)	0 (0-10)
70	RS	Right surround	Rs	Right Surround	110 (90-135)	0 (0-10)
71	FLc	Front left centre				
72	FRc	Front right centre				
73	BC	Back centre				
74	LFE1	Low frequency effects-1				
75	SiL	Side left				
76	SiR	Side right				
77	HFL	High front left	HL	Height Left	-30 (22-40)	30 (25-40)
78	HFR	High front right	HR	Height Right	30 (22-40)	30 (25-40)
79	HFC	High front centre	HC	Height centre	0	30 (25-40)

¹ Auro-3D® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

This document			Auro-3D® ¹ Home Theater Setup			
Channel number	Channel label ID name	Full name of ID	Abbrev	Speaker	Azimuth (°) Nominal (Range)	Elevation (°) Nominal (Range)
80	OhC	Overhead centre	T	Top		90 (65-100)
81	HLS	High left surround	HLs	Height Left Surround	-110 (90-135)	30 (25-40)
82	HRS	High right surround	HRs	Height Right Surround	110 (90-135)	30 (25-40)
83	HSiL	High side left				
84	HSiR	High side right				
85	HBC	High back centre				
86	BtFC	Bottom front centre				
87	BtFLmid	Bottom front left middle				
88	BtFRmid	Bottom front right middle				
89	FLw	Front left wide				
90	FRw	Front right wide				
91	BL	Back left	Lb	Left Back	-150 (135-155)	0 (0-10)
92	BR	Back right	Rb	Right Back	150 (135-155)	0 (0-10)
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left				
100	OhFR	Overhead front right				
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left				
104	OhBR	Overhead back right				
105	HFLmid	High front left middle				
106	HFRmid	High front right middle				
107	HBLmid	High back left middle				
108	HBRmid	High back right wide				
109	FLmid	Front left middle				
110	FRmid	Front right middle				
111	BLmid	Back left middle				
112	BRmid	Back right middle				
113	LFE2	Low frequency effects-2				
114	OhBC	Overhead back centre				
Channel assignment on display						
151	DL	Display left				
152	DR	Display right				
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display left				
157	HDR	High display right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BtDL	Bottom display left				
162	BtDR	Bottom display right				
163	BtDLc	Bottom display left centre				
164	BtDRc	Bottom display right centre				
165	BtDC	Bottom display centre				

Table B.3 (2 of 3)

This document			Dolby Atmos® ² 9.1.6 Overhead Speakers		
Channel number	Channel label ID name	Full name of ID	Notation	Azimuth Nominal (Range)	Elevation Nominal (Range)
65	FL	Front left	Left speaker	-(22-30)	0
66	FR	Front right	Right speaker	(22-30)	0
67	FC	Front centre	centre speaker	0	0
68	LFE	Low frequency effects	Subwoofer		
69	LS	Left surround	Left surround speaker	-100(90-110)	0
70	RS	Right surround	Right surround speaker	100(90-110)	0
71	FLc	Front left centre			
72	FRc	Front right centre			
73	BC	Back centre			
74	LFE1	Low frequency effects-1			
75	SiL	Side left			
76	SiR	Side right			
77	HfL	High front left			
78	HfR	High front right			
79	HfC	High front centre			
80	OhC	Overhead centre			
81	HLS	High left surround			
82	HRS	High right surround			
83	HSiL	High side left			
84	HSiR	High side right			
85	HBC	High back centre			
86	BtFC	Bottom front centre			
87	BtFLmid	Bottom front left middle			
88	BtFRmid	Bottom front right middle			
89	FLw	Front left wide	Left wide speaker	-60(50-70)	0
90	FRw	Front right wide	Right wide speaker	60(50-70)	0
91	BL	Back left			
92	BR	Back right			
93	LBS	Left back surround			
94	RBS	Right back surround			
95	HBL	High back left			
96	HBR	High back right			
97	HFLw	High front left wide			
98	HFRw	High front right wide			
99	OhFL	Overhead front left	Left top front overhead speaker	-45(30-55)	45(30-55)
100	OhFR	Overhead front right	Right top front overhead speaker	45(30-55)	45(30-55)
101	OhSiL	Overhead side left	Left top middle overhead speaker	-90(75-105)	45(30-55)
102	OhSiR	Overhead side right	Right top middle overhead speaker	90(75-105)	45(30-55)
103	OhBL	Overhead back left	Left top rear overhead speaker	-135(125-150)	45(30-55)
104	OhBR	Overhead back right	Right top rear overhead speaker	135(125-150)	45(30-55)
105	HFLmid	High front left middle			
106	HFRmid	High front right middle			
107	HBLmid	High back left middle			
108	HBRmid	High back right middle			
109	FLmid	Front left middle	Left rear surround speaker	-135(135-150)	0
110	FRmid	Front right middle	Right rear surround speaker	135(135-150)	0
111	BLmid	Back left middle			
112	BRmid	Back right middle			
113	LFE2	Low frequency effects-2			
114	OhBC	Overhead back centre			
Channel assignment on display					
151	DL	Display left			
152	DR	Display right			
153	DLc	Display left centre			
154	DRc	Display right centre			
155	DC	Display centre			
156	HDL	High display left			
157	HDR	High display right			
158	HDLc	High display left centre			
159	HDRc	High display right centre			
160	HDC	High display centre			
161	BtDL	Bottom display left			
162	BtDR	Bottom display right			
163	BtLc	Bottom display left centre			
164	BtRc	Bottom display right centre			
165	BtDC	Bottom display centre			

² Dolby Atmos® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

Table B.3 (3 of 3)

This document			DTS:X® ³ Home Theater Setup Guidelines for Consumers			
Channel number	Channel label ID name	Full name of ID	LABEL	Notation	Azimuth Nominal (Range)	Elevation Nominal (Range)
65	FL	Front left	L	LEFT	-30(30-45)	0
66	FR	Front right	R	RIGHT	30(30-45)	0
67	FC	Front centre	C	centre	0	0
68	LFE	Low frequency effects	LFE1	LFE 1		
69	LS	Left surround	Ls	SRRD LEFT	-110(100-120)	0
70	RS	Right surround	Rs	SRRD RIGHT	110(100-120)	0
71	FLc	Front left centre	Lc	LEFT centre	-15	0
72	FRc	Front right centre	Rc	RIGHT centre	15	0
73	BC	Back centre	Cs	SRRD centre	180	0
74	LFE1	Low frequency effects-1				
75	SiL	Side left	Lss	SIDE SRRD LEFT	-90	0
76	SiR	Side right	Rss	SIDE SRRD RIGHT	90	0
77	HFL	High front left				
78	HFR	High front right				
79	HFC	High front centre	Ch	HIGH centre	0	45(20-45)
80	OhC	Overhead centre	Oh	TOP centre SRRD	0-360	90(75-90)
81	HLS	High left surround				
82	HRS	High right surround				
83	HSiL	High side left	Lhs	HIGH SIDE LEFT	-90	45(20-45)
84	HSiR	High side right	Rhs	HIGH SIDE RIGHT	90	45(20-45)
85	HBC	High back centre	Chr	HIGH REAR centre	180	45(20-45)
86	BfC	Bottom front centre	Cb	LOW FRONT centre	0	-30(15-45)
87	BtFLmid	Bottom front left middle	Lb	LOW FRONT LEFT	-45(15-45)	-30(15-45)
88	BtFRmid	Bottom front right middle	Rb	LOW FRONT RIGHT	45(15-45)	-30(15-45)
89	FLw	Front left wide	Lw	LEFT WIDE	-60(50-70)	0
90	FRw	Front right wide	Rw	RIGHT WIDE	60(50-70)	0
91	BL	Back left	Lsr	REAR SRRD LEFT	-150(135-150)	0
92	BR	Back right	Rsr	REAR SRRD RIGHT	150(135-150)	0
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left	Ltf	TOP FRONT LEFT	-45(30-60)	60(50-70)
100	OhFR	Overhead front right	Rtf	TOP FRONT RIGHT	45(30-60)	60(50-70)
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left	Ltr	TOP REAR LEFT	-135(110-150)	60(50-70)
104	OhBR	Overhead back right	Rtr	TOP REAR RIGHT	135(110-150)	60(50-70)
105	HFLmid	High front left middle	Lh	HIGH LEFT	-45(30-60)	45(20-45)
106	HFRmid	High front right middle	Rh	HIGH RIGHT	45(30-60)	45(20-45)
107	HBLmid	High back left middle	Lhr	HIGH REAR LEFT	-135(110-150)	45(20-45)
108	HBRmid	High back right middle	Rhr	HIGH REAR RIGHT	135(110-135)	45(20-45)
109	FLmid	Front left middle				
110	FRmid	Front right middle				
111	BLmid	Back left middle				
112	BRmid	Back right middle				
113	LFE2	Low frequency effects-2	LFE2	LFE 2		
114	OhBC	Overhead back centre				
Channel assignment on display						
151	DL	Display left				
152	DR	Display right				
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display left				
157	HDR	High display right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BtDL	Bottom display left				
162	BtDR	Bottom display right				
163	BtDLc	Bottom display left centre				
164	BtDRc	Bottom display right centre				
165	BtDC	Bottom display centre				

³ DTS:X® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of this product.

B.5 Comparison table between this document and ITU-R BS2051-1

Table B.4 shows comparison table of the geometrical positions of the loudspeakers between this document and ITU-R BS2051-1. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.4 – Comparison table between this document and ITU-R BS2051-1
(1 of 2)

This document			ITU-R BS.2051-1		
Channel number	Channel label ID name	Full name of ID	SP Label	Azimuth	Elevation
65	FL	Front left	M+30	30	0
66	FR	Front right	M-30	-30	0
67	FC	Front centre	M+000	0	0
68	LFE	Low frequency effects	LFE		
69	LS	Left surround	M+110	110	0
70	RS	Right surround	M-110	-110	0
71	FLc	Front left centre	M+022	22	0
72	FRc	Front right centre	M-022	-22	0
73	BC	Back centre	M+180	180	0
74	LFE1	Low frequency effects-1	LFE1	45	-30
75	SiL	Side left	M+090	90	0
76	SiR	Side right	M-090	-90	0
77	HFL	High front left	U+030	30	30
78	HFR	High front right	U-030	-30	30
79	HFC	High front centre	U+000	0	30
80	OhC	Overhead centre	T+000	-	90
81	HLS	High left surround	U+110	110	30
82	HRS	High right surround	U-110	-110	30
83	HSiL	High side left	U+090	90	30
84	HSiR	High side right	U-090	-90	30
85	HBC	High back centre	U+180	180	30
86	BiFC	Bottom front centre	B+000	0	-30
87	BiFLmid	Bottom front left middle	B+045	45	-30
88	BiFRmid	Bottom front right middle	B-045	-45	-30
89	FLw	Front left wide	M+060	60	0
90	FRw	Front right wide	M-060	-60	0
91	BL	Back left			
92	BR	Back right			
93	LBS	Left back surround			
94	RBS	Right back surround			
95	HBL	High back left			
96	HBR	High back right			
97	HFLw	high front left wide	U+60	60	30
98	HFRw	high front right wide	U-60	-60	30
99	OhFL	Overhead front left			
100	OhFR	Overhead front right			
101	OhSiL	Overhead side left			
102	OhSiR	Overhead side right			
103	OhBL	Overhead back left			
104	OhBR	Overhead back right			
105	HFLmid	high front left middle	U+45	45	30
106	HFRmid	high front right middle	U-45	-45	30
107	HBLmid	high Back left middle	U+135	135	30
108	HBRmid	high Back right wide	U-135	-135	30
109	FLmid	Front left middle	M+45	45	0
110	FRmid	Front right middle	M-45	-45	0
111	BLmid	Back left middle	M+135	135	0
112	BRmid	Back right middle	M-135	-135	0
113	LFE2	Low frequency effects-2	LFE2	-45	-30
114	OhBC	Overhead back centre	UH+180	180	45
Channel assignment on display					
151	DL	Display left	M+SC	Left screen edge	
152	DR	Display right	M-SC	Right screen edge	
153	DLc	Display left centre			
154	DRc	Display right centre			
155	DC	Display centre			
156	HDL	High display left			
157	HDR	High display right			
158	HDLc	High display left centre			
159	HDRc	High display right centre			
160	HDC	High display centre			
161	BiDL	Bottom display left			
162	BiDR	Bottom display right			
163	BiLc	Bottom display left centre			
164	BiRc	Bottom display right centre			
165	BiDC	Bottom display centre			

Table B.4 (2 of 2)[illegible]

B.6 Comparison table between this document and ITU-R BS2094-1

Table B.5 shows comparison tables of the geometrical positions of the loudspeakers between this document and ITU-R BS2051-1. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.5 – Comparison table between this document and ITU-R BS2094-1 (1 of 6)

This document			ITU-R BS.2094-1			
Channel number	Channel label ID name	Full name of ID	audioChannelFormatID	audioChannelFormatName	Azimuth (°)	Elevation (°)
	FL	Front left	AC_00010001	FrontLeft	M+030	0
66	FR	Front right	AC_00010002	FrontRight	M-030	0
67	FC	Front centre	AC_00010003	FrontCentre	M+000	0
68	LFE	Low frequency effects	AC_00010004*	LowFrequencyEffects	LFE	-30
69	LS	Left surround	AC_00010005	SurroundLeft	M+110	0
70	RS	Right surround	AC_00010006	SurroundRight	M-110	0
71	FLc	Front left centre	AC_00010007	FrontLeftOfCentre	M+022	0
72	FRc	Front right centre	AC_00010008	FrontRightOfCentre	M-022	0
73	BC	Back centre	AC_00010009	BackCentre	M+180	0
74	LFE1	Low frequency effects-1	AC_00010020*	LowFrequencyEffects1	LFE1	-30
75	SiL	Side left	AC_0001000a	SideLeft	M+090	0
76	SiR	Side right	AC_0001000b	SideRight	M-090	0
77	HFL	High front left	AC_0001000d	TopFrontLeft	U+030	30
78	HFR	High front right	AC_0001000f	TopFrontRight	U-030	30
79	HFC	High front centre	AC_0001000e	TopFrontCentre	U+000	30
80	OhC	Overhead centre	AC_0001000c	TopCentre	T+000	90
81	HLS	High left surround	AC_00010010	TopSurroundLeft	U+110	30
82	HRS	High right surround	AC_00010012	TopSurroundRight	U-110	30
83	HSiL	High side left	AC_00010013	TopSideLeft	U+090	30
84	HSiR	High side right	AC_00010014	TopSideRight	U-090	30
85	HBC	High back centre	AC_00010011	TopBackCentre	U+180	30
86	BiFC	Bottom front centre	AC_00010015	BottomFrontCentre	B+000	-30
87	BiFLmid	Bottom front left middle	AC_00010016	BottomFrontLeft	B+045	-30
88	BiFRmid	Bottom front right middle	AC_00010017	BottomFrontRight	B-045	-30
89	FLw	Front left wide	AC_00010018	FrontLeftWide	M+060	0
90	FRw	Front right wide	AC_00010019	FrontRightWide	M-060	0
91	BL	Back left				
92	BR	Back right				
93	LBS	Left back surround				
94	RBS	Right back surround				
95	HBL	High back left				
96	HBR	High back right				
97	HFLw	High front left wide				
98	HFRw	High front right wide				
99	OhFL	Overhead front left				
100	OhFR	Overhead front right				
101	OhSiL	Overhead side left				
102	OhSiR	Overhead side right				
103	OhBL	Overhead back left				
104	OhBR	Overhead back right				
105	HFLmid	High front left middle	AC_00010022	TopFrontLeftMid	U+045	30
106	HFRmid	High front right middle	AC_00010023	TopFrontRightMid	U-045	30
107	HBLmid	High back left middle	AC_0001001e	TopBackLeftMid	U+135	30
108	HBRmid	High back right middle	AC_0001001f	TopBackRightMid	U-135	30
109	FLmid	Front left middle	AC_00010026	FrontLeftMid	M+045	0
110	FRmid	Front right middle	AC_00010027	FrontRightMid	M-045	0
111	BLmid	Back left middle	AC_0001001c	BackLeftMid	M+135	0
112	BRmid	Back right middle	AC_0001001d	BackRightMid	M-135	0
113	LFE2	Low frequency effects-2	AC_00010021*	LowFrequencyEffectsR	LFE2	-30
			AC_0001001a	BackLeftMidDiffuse	M+135_Diff	0
			AC_0001001b	BackRightMidDiffuse	M-135_Diff	0
114	OhBC	Overhead back centre	AC_00010028	UpperTopBackCentre	UH+180	45
Channel assignment on display						
151	DL	Display left	AC_00010024	FrontLeftScreen	M+SC	0
152	DR	Display right	AC_00010025	FrontRightScreen	M-SC	0
153	DLc	Display left centre				
154	DRc	Display right centre				
155	DC	Display centre				
156	HDL	High display Left				
157	HDR	High display Right				
158	HDLc	High display left centre				
159	HDRc	High display right centre				
160	HDC	High display centre				
161	BiDL	Bottom display left				
162	BiDR	Bottom display right				
163	BiLc	Bottom display left centre				
164	BiRc	Bottom display right centre				
165	BiDC	Bottom display centre				

Table B.5 (2 of 6)

This document		ITU-R BS.2094-1				
Channel number	Channel label ID name	AP_00010001	AP_00010002	AP_0001000a	AP_0001000b	AP_0001000c
		mono_(0+1+0)	stereo_(0+2+0)	3.0_(0+3+0)	4.0_(0+4+0)	5.0_(0+5+0)
		BS.775	BS.775, BS.2051 (A)	BS.775	BS.775	BS.775
65	FL		FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR		FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre		FrontCentre	FrontCentre	FrontCentre
68	LFE					
69	LS					SurroundLeft
70	RS					SurroundRight
71	FLc					
72	FRc					
73	BC				BackCentre	
74	LFE1					
75	SiL					
76	SiR					
77	HFL					
78	HFR					
79	HFC					
80	OhC					
81	HLS					
82	HRS					
83	HSiL					
84	HSiR					
85	HBC					
86	BtFC					
87	BtFLmid					
88	BtFRmid					
89	FLw					
90	FRw					
91	BL					
92	BR					
93	LBS					
94	RBS					
95	HBL					
96	HBR					
97	HFLw					
98	HFRw					
99	OhFL					
100	OhFR					
101	OhSiL					
102	OhSiR					
103	OhBL					
104	OhBR					
105	HFLmid					
106	HFRmid					
107	HBLmid					
108	HBRmid					
109	FLmid					
110	FRmid					
111	BLmid					
112	BRmid					
113	LFE2					
114	OhBC					
Channel assignment on display						
151	DL					
152	DR					
153	DLc					
154	DRc					
155	DC					
156	HDL					
157	HDR					
158	HDLc					
159	HDRc					
160	HDC					
161	BtDL					
162	BtDR					
163	BtLc					
164	BtRc					
165	BtDC					

Table B.5 (3 of 6)

This document		ITU-R BS.2094-1				
Channel number	Channel label ID name	AP_00010003	AP_0001000d	AP_0001000e	AP_0001000f	AP_00010004
		5.1_(0+5+0)	6.1_(0+6+0)	7.1_front_(0+7+0)	7.1_back_(0+7+0)	7.1_top_(2+5+0)
		BS.775, BS.2051 (B)	N/A	N/A	BS.2051(I)	BS.2051 (C)
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft	SurroundLeft		SurroundLeft
70	RS	SurroundRight	SurroundRight	SurroundRight		SurroundRight
71	FLc					
72	FRc					
73	BC		BackCentre			
74	LFE1					
75	SiL				SideLeft	
76	SiR				SideRight	
77	HFL					TopFrontLeft
78	HFR					TopFrontRight
79	HFC					
80	OhC					
81	HLS					
82	HRS					
83	HSiL					
84	HSiR					
85	HBC					
86	BtFC					
87	BtFLmid					
88	BtFRmid					
89	FLw					
90	FRw					
91	BL					
92	BR					
93	LBS					
94	RBS					
95	HBL					
96	HBR					
97	HFLw					
98	HFRw					
99	OhFL					
100	OhFR					
101	OhSiL					
102	OhSiR					
103	OhBL					
104	OhBR					
105	HFLmid					
106	HFRmid					
107	HBLmid					
108	HBRmid					
109	FLmid			FrontLeftMid		
110	FRmid			FrontRightMid		
111	BLmid				BackLeftMid	
112	BRmid				BackRightMid	
113	LFE2					
114	OhBC					
Channel assignment on display						
151	DL					
152	DR					
153	DLc					
154	DRc					
155	DC					
156	HDL					
157	HDR					
158	HDLc					
159	HDRc					
160	HDC					
161	BtDL					
162	BtDR					
163	BtLc					
164	BtRc					
165	BtDC					

Table B.5 (4 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010012	AP_00010013	AP_00010014	AP_00010016
		7.1side_5.1+sc_(0+7+0)	7.1topside_5.1.2(0+5+0)	9.1screen_5.1.2+sc(2+7+0)	9.1_7.1.2(2+7+0)
		N/A	N/A	N/A	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects	LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft	SurroundLeft	
70	RS	SurroundRight	SurroundRight	SurroundRight	
71	FLc				
72	FRc				
73	BC				
74	LFE1				
75	SiL				SideLeft
76	SiR				SideRight
77	HFL				
78	HFR				
79	HFC				
80	OhC				
81	HLS				
82	HRS				
83	HSiL		TopSideLeft	TopSideLeft	TopSideLeft
84	HSiR		TopSideRight	TopSideRight	TopSideRight
85	HBC				
86	BiFC				
87	BiFLmid				
88	BiFRmid				
89	FLw				
90	FRw				
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HL				
96	HR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid				
106	HFRmid				
107	HLmid				
108	HRmid				
109	FLmid				
110	FRmid				
111	BLmid				BackLeftMid
112	BRmid				BackRightMid
113	LFE2				
114	OhBC				
Channel assignment on display					
151	DL	FrontLeftScreen		FrontLeftScreen	
152	DR	FrontRightScreen		FrontRightScreen	
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BiDL				
162	BiDR				
163	BiLc				
164	BiRc				
165	BiDC				

Table B.5 (5 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010005	AP_00010006	AP_00010007	AP_00010015
		9.1 5.1.4 (4+5+0)	10.1 (4+5+1)	10.2 (3+7+0)	11.1 5.1.4+sc (4+7+0)
		BS.2051 (D)	BS.2051 (E)	BS.2051 (F)	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE	LowFrequencyEffects	LowFrequencyEffects		LowFrequencyEffects
69	LS	SurroundLeft	SurroundLeft		SurroundLeft
70	RS	SurroundRight	SurroundRight		SurroundRight
71	FLc				
72	FRc				
73	BC				
74	LFE1			LowFrequencyEffectsL	
75	SiL			SideLeft	
76	SiR			SideRight	
77	HFL	TopFrontLeft	TopFrontLeft		TopFrontLeft
78	HFR	TopFrontRight	TopFrontRight		TopFrontRight
79	HFC				
80	OhC				
81	HLS	TopSurroundLeft	TopSurroundLeft		TopSurroundLeft
82	HRS	TopSurroundRight	TopSurroundRight		TopSurroundRight
83	HSiL				
84	HSiR				
85	HBC				
86	BtFC		BottomFrontcentre		
87	BtFLmid				
88	BtFRmid				
89	FLw				
90	FRw				
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HL				
96	HBR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid			TopFrontLeftMid	
106	HFRmid			TopFrontRightMid	
107	HLmid				
108	HBRmid				
109	FLmid				
110	FRmid				
111	BLmid			BackLeftMid	
112	BRmid			BackRightMid	
113	LFE2			LowFrequencyEffectsR	
114	OhBC			UpperTopBackCentre	
Channel assignment on display					
151	DL				FrontLeftScreen
152	DR				FrontRightScreen
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BtDL				
162	BtDR				
163	BtLc				
164	BtRc				
165	BtDC				

Table B.5 (6 of 6)

This document		ITU-R BS.2094-1			
Channel number	Channel label ID name	AP_00010017	AP_00010008	AP_00010009	AP_00010011
		11.1 7.1.4 (4+7+0)	13.1 (4+9+0)	22.2 (9+10+3)	Auro-3D (9+9+0)
		BS.2051(J)	BS.2051 (G)	BS.2051 (H)	N/A
65	FL	FrontLeft	FrontLeft	FrontLeft *1	FrontLeft
66	FR	FrontRight	FrontRight	FrontRight *2	FrontRight
67	FC	FrontCentre	FrontCentre	FrontCentre	FrontCentre
68	LFE		LowFrequencyEffectsL		LowFrequencyEffects
69	LS				SurroundLeft
70	RS				SurroundRight
71	FLc				
72	FRc				
73	BC			BackCentre	
74	LFE1	LowFrequencyEffectsL		LowFrequencyEffectsL	
75	SiL	SideLeft	SideLeft	SideLeft	SideLeft
76	SiR	SideRight	SideRight	SideRight	SideRight
77	HFL				TopFrontLeft
78	HFR				TopFrontRight
79	HFC			TopFrontCentre	TopFrontCentre
80	OhC			TopCentre	
81	HLS				TopSurroundLeft
82	HRS				TopSurroundRight
83	HSiL			TopSideLeft	TopSideLeft
84	HSiR			TopSideRight	TopSideRight
85	HBC			TopBackCentre	
86	BiFC			BottomFrontcentre	
87	BiFLmid			BottomFrontLeft	
88	BiFRmid			BottomFrontRight	
89	FLw			FrontLeft *3	
90	FRw			FrontRight *4	
91	BL				
92	BR				
93	LBS				
94	RBS				
95	HL				
96	HR				
97	HFLw				
98	HFRw				
99	OhFL				
100	OhFR				
101	OhSiL				
102	OhSiR				
103	OhBL				
104	OhBR				
105	HFLmid	TopFrontLeftMid	TopFrontLeftMid	TopFrontLeftMid	
106	HFRmid	TopFrontRightMid	TopFrontRightMid	TopFrontRightMid	
107	HBLmid	TopBackLeftMid	TopBackLeftMid	TopBackLeftMid	TopBackLeftMid
108	HBRmid	TopBackRightMid	TopBackRightMid	TopBackRightMid	TopBackRightMid
109	FLmid				
110	FRmid				
111	BLmid	BackLeftMid	BackLeftMid	Back left middle	
112	BRmid	BackRightMid	BackRightMid	Back right middle	
113	LFE2			LowFrequencyEffectsR	
					BackLeftMidDiffuse
					BackRightMidDiffuse
114	OhBC				
Channel assignment on display					
151	DL		FrontLeftScreen		
152	DR		FrontRightScreen		
153	DLc				
154	DRc				
155	DC				
156	HDL				
157	HDR				
158	HDLc				
159	HDRc				
160	HDC				
161	BiDL				
162	BiDR				
163	BiLc				
164	BiRc				
165	BiDC				
				Channel name in Recommendation	
				*1: Front Left Centre	
				*2: Front Right Centre	
				*3: Front left	
				*4: Font Right	

B.7 Comparison table between this document and ISO/IEC 23001-8

Table B.6 shows comparison table of the geometrical positions of the loudspeakers between this document and ISO/IEC 23001-8. The angle of azimuth for loudspeaker position is shown in Figure 8.

Table B.6 – Comparison table between this document and ISO/IEC 23001-8 (1 of 3)

This document			ISO/IEC 23001-8					
Channel number	Channel label ID name	Full name of ID	Table 8 – Definition of loudspeaker index, OutputChannelPosition			Table 10 – Definition of LoudspeakerGeometry		
			Value	Abbr.	Name	Value	Azimuth (°)	Elevation (°)
65	FL	Front left	6	Lc	Left front centre	0	30	0
66	FR	Front right	7	Rc	Right front centre	1	-30	0
67	FC	Front centre	2	C	Centre front	2	0	0
68	LFE	Low frequency effects	3	LFE	Low frequency enhancement	3	0	-15
69	LS	Left surround	4	Ls	Left surround	4	110	0
70	RS	Right surround	5	Rs	Right surround	5	-110	0
71	FLc	Front left centre				6	22	0
72	FRc	Front right centre				7	-22	0
73	BC	Back centre	10	Cs	Rear centre	10	180	0
74	LFE1	Low frequency effects-1		LFE	Low frequency enhancement	26	45	-15
75	SiL	Side left	13	Lss	left side surround,	13	90	0
76	SiR	Side right	14	Rss	right side surround,	14	-90	0
77	HFL	High front left	17	Lv	Left front vertical height	17	30	35
78	HFR	High front right	18	Rv	Right front vertical height	18	-30	35
79	HFC	High front centre	19	Cv	Centre front vertical height	19	0	35
80	OhC	Overhead centre	25	Ts	Top centre surround	25	0	90
81	HLS	High left surround	30	Lvs	Left vertical height surround	30	110	35
82	HRS	High right surround	31	Rvs	Right vertical height surround	31	-110	35
83	HSiL	High side left	23	Lvss	Left vertical height side surround	23	90	35
84	HSiR	High side right	24	Rvss	Right vertical height side surround	24	-90	35
85	HBC	High back centre	22	Cvr	Centre vertical height rear	22	180	35
86	BFC	Bottom front centre	29	Cb	Centre front vertical bottom	29	0	-15
87	BtFLmid	Bottom front left middle	27	Lb	Left front vertical bottom	27	45	-15
88	BtFRmid	Bottom front right middle	28	Rb	Right front vertical bottom	28	-45	-15
89	FLw	Front left wide	0	L	Left front	15	60	0
90	FRw	Front right wide	1	R	Right front	16	-60	0
91	BL	Back left	8	Lsr	Rear surround left	41	150	0
92	BR	Back right	9	Rsr	Rear surround right	42	-150	0
93	LBS	Left back surround	11	Lsd	Left surround direct			
94	RBS	Right back surround	12	Rsd	Right surround direct			
95	HBL	High back left						
96	HBR	High back right						
97	HFLw	High front left wide	15	Lw	Left wide front			
98	HFRw	High front right wide	16	Rw	Right wide front			
99	OhFL	Overhead front left						
100	OhFR	Overhead front right						
101	OhSiL	Overhead side left						
102	OhSiR	Overhead side right						
103	OhBL	Overhead back left						
104	OhBR	Overhead back right						
105	HFLmid	High front left middle				32	45	35
106	HFRmid	High front right middle				33	-45	35
107	HBLmid	High back left middle	20	Lvr	Left surround vertical height rear	20	135	35
108	HBRmid	High back right middle	21	Rvr	Right surround vertical height rear	21	-135	35
109	FLmid	Front left middle				34	45	0
110	FRmid	Front right middle				35	-45	0
111	BLmid	Back left middle	8	Lsr	Rear surround left	8	135	0
112	BRmid	Back right middle	9	Rsr	Rear surround right	9	-135	0
113	LFE2	Low frequency effects-2	26	LFE2	Low frequency enhancement 2	26	45	-15
114	OhBC	Overhead back centre						
Channel assignment on Display								
151	DL	Display left	37	Leos	Left edge of screen	37		
152	DR	Display right	38	Reos	Right edge of screen	38		
153	DLc	Display Left centre	39	Hwbcsl	half-way btw. centre of display and left edge of display	39		
154	DRc	Display Right centre	40	Hwbcar	half-way btw. centre of display and right edge of display	40		
155	DC	Display centre						
156	HDL	High display left						
157	HDR	High display right						
158	HDLc	High display left centre						
159	HDRc	High display right centre						
160	HDC	High display centre						
161	BtDL	Bottom display left						
162	BtDR	Bottom display right						
163	BtLc	Bottom display left centre						
164	BtRc	Bottom display right centre						
165	BtDC	Bottom display centre						

Table B.6 (2 of 3)

This document		ISO/IEC 23001-8										
Channel number	Channel label ID name	Channel Configuration										
		0	1	2	3	4	5	6	7	8	9	10
65	FL			L	L	L	L	L	Lc		L	L
66	FR			R	R	R	R	R	Rc		R	R
67	FC		C		C	C	C	C	C			
68	LFE							LFE	LFE			
69	LS						Ls	Ls	Ls			Ls
70	RS						Rs	Rs	Rs			Rs
71	FLc											
72	FRc											
73	BC					Cs					Cs	
74	LFE1											
75	SiL											
76	SiR											
77	HFL											
78	HFR											
79	HFC											
80	OhC											
81	HLS											
82	HRs											
83	HSiL											
84	HSiR											
85	HBC											
86	BtFC											
87	BtFLmid											
88	BtFRmid											
89	FLw											
90	FRw											
91	BL											
92	BR											
93	LBS											
94	RBS											
95	HBL											
96	HBR											
97	HFLw											
98	HFRw											
99	OhFL											
100	OhFR											
101	OhSiL											
102	OhSiR											
103	OhBL											
104	OhBR											
105	HFLmid											
106	HFRmid											
107	HBLmid											
108	HBRmid											
109	FLmid								L			
110	FRmid								R			
111	BLmid											
112	BRmid											
113	LFE2											
114	OhBC											
Channel assignment on display												
151	DL											
152	DR											
153	DLc											
154	DRc											
155	DC											
156	HDL											
157	HDR											
158	HDLc											
159	HDRc											
160	HDC											
161	BtDL											
162	BtDR											
163	BtLc											
164	BtRc											
165	BtDC											
		any setup							N.A.			

Table B.6 (3 of 3)[illegible]

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Standard test materials for three-dimensional multichannel stereophonic sound systems – Series A, available at https://www.ite.or.jp/content/test-materials/3dmsss_a/

AURO-3D® HOME THEATER SETUP INSTALLATION GUIDELINES, available at https://www.auro-3d.com/wp-content/uploads/documents/Auro-3D-Home-Theater-Setup-Guidelines_lores.pdf

Dolby Atmos®, <https://www.dolby.com/us/en/guide/speaker-setup-guides/9.1.6-overhead-speaker-setup-guide.html>

DTS:X® Home Theater Setup Guidelines for Consumers, available at <http://www.dts.com/dtsx>

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

SYSTÈMES AUDIO, VIDÉO ET MULTIMÉDIA – AFFECTATION GÉNÉRALE DES VOIES DES SYSTÈMES AUDIO À VOIES MULTIPLES

AVANT-PROPOS

- 1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
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- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'attention est attirée sur le fait que certains des éléments de la présente Publication de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets et de ne pas avoir signalé leur existence.

La Norme internationale IEC 62574 a été établie par le domaine d'application 20 du comité d'études 100 de l'IEC: Systèmes et équipements audio, vidéo et services de données.

Cette deuxième édition annule et remplace la première édition parue en 2011. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) le modèle spatial d'affectation des voies est modifié;
- b) la définition des mappings ou affectations des voies et leurs étiquettes est modifiée;
- c) les métadonnées sont nouvellement spécifiées;

- d) les mappings ou affectations des voies et leurs étiquettes de la première édition sont inclus dans l'Annexe A.

Le texte de cette Norme internationale est issu des documents suivants:

CDV	Rapport de vote
100/3198/CDV	100/3246/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "<http://webstore.iec.ch>" dans les données relatives au document recherché. À cette date, le document sera

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INTRODUCTION

Il existe de nombreux formats audio à voies multiples et de nouveaux formats verront le jour. Ces formats ont une affectation des voies particulière, telle qu'un mapping ou affectation des canaux ou voies et des étiquettes de voies, mais les affectations de base des voies ne sont pas très différentes d'un format à un autre. Ces formats peuvent être unifiés en une affectation commune des voies sous forme d'une "affectation générale des voies". La présente affectation générale des voies apporte aux dispositifs audio et aux interfaces audionumériques, une affectation uniformisée des voies pour tout format audio à voies multiples. La présente édition 2 assure la cohérence avec les différentes normes. Les noms des voies ont été modifiés dans cette deuxième édition, les différences sont indiquées dans l'Annexe B. Comme plusieurs normes se réfèrent à la première édition du présent document (voir l'Article A.1), l'Annexe A reprend une partie importante de l'IEC 62574:2011 (la première édition). La première édition (l'IEC 62574:2011) et la deuxième édition (le présent document) peuvent être différenciées au moyen de la numérotation des voies.

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SYSTÈMES AUDIO, VIDÉO ET MULTIMÉDIA –

AFFECTATION GÉNÉRALE DES VOIES DES SYSTÈMES AUDIO À VOIES MULTIPLES

1 Domaine d'application

Le présent document spécifie l'affectation générale des voies et des métadonnées pour le format audio à voies multiples. Le présent document, avec son contenu de mapping et d'étiquetage des voies, uniformise la pratique de l'affectation des voies pour les dispositifs sources, les interfaces audionumériques et les dispositifs récepteurs. L'affectation générale des voies exclut la spécification de la position exacte de chaque haut-parleur. Les métadonnées contiennent la position exacte de chaque haut-parleur; leur information de position n'est toutefois pas normalisée, car la position du haut-parleur est différente dans les divers formats d'ambiophonie. Il est destiné aux applications grand public et non aux salles de spectacle. Jusqu'à 65 étiquettes de positions de haut-parleurs et 15 étiquettes pour les haut-parleurs sur l'affichage sont spécifiées, lesquelles peuvent être utilisées pour tous les formats audio à voies multiples actuels. Le concept d'affectation des voies est centré sur la pièce et centré sur l'auditeur. Cette affectation générale des voies spécifie la position des haut-parleurs telle qu'elle est perçue par l'auditeur.

2 Références normatives

Le présent document ne contient aucune référence normative.

3 Termes et définitions

Pour les besoins du présent document, les termes et définitions suivants s'appliquent.

L'ISO et l'IEC tiennent à jour des bases de données terminologiques destinées à être utilisées en normalisation, consultables aux adresses suivantes:

- IEC Electropedia: disponible à l'adresse <http://www.electropedia.org/>
- ISO Online browsing platform: disponible à l'adresse <https://www.iso.org/obp/ui/fr/>

3.1

niveau plafond

niveau de haut-parleur situé verticalement dessus du niveau supérieur, nominalement à proximité du plafond ou sur celui-ci (au plafond), étiqueté en commençant par les lettres désignatives "Oh"

3.2

niveau supérieur

niveau de haut-parleur situé verticalement au-dessous du niveau plafond et au-dessus du niveau intermédiaire, nominalement au-dessus de l'écran ou à proximité du plafond, étiqueté en commençant par la lettre désignative "H"

3.3

niveau intermédiaire

niveau de haut-parleur situé nominalement dans le plan vertical à la hauteur des oreilles de l'auditeur ou, en variante, au centre de l'écran, dont les étiquettes ne comportent pas de lettre désignative

3.4

niveau bas

niveau de haut-parleur situé nominalement au-dessous de l'écran ou à proximité du sol, étiqueté en commençant par les lettres désignatives "Bt"

3.5

avant gauche

FL

position de haut-parleur située du côté avant gauche au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FL" est dérivé du terme anglais développé correspondant "front left".

3.6

avant droit

FR

position de haut-parleur située du côté avant droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FR" est dérivé du terme anglais développé correspondant "front right".

3.7

avant centre

FC

position de haut-parleur située au centre frontal au niveau intermédiaire ou, en variante, correspondant au centre de l'écran tel qu'il est vu depuis la zone où les spectateurs sont assis

Note 1 à l'article: Le terme abrégé "FC" est dérivé du terme anglais développé correspondant "front centre".

3.8

effets à basses fréquences

LFE

effets sonores dans la bande des basses fréquences, généralement en dessous de 120 Hz; la voie LFE n'est pas utilisée comme voie de caisson de graves pour compenser la bande des basses fréquences de chaque haut-parleur

Note 1 à l'article: Si un système de LFE mono est utilisé, celui-ci est transporté dans la voie LFE et la position du haut-parleur LFE au niveau bas n'est pas définie

Note 2 à l'article: Le terme abrégé "LFE" est dérivé du terme anglais développé correspondant "low-frequency effects".

3.9

gauche ambiophonique

LS

position de haut-parleur située du côté gauche légèrement derrière l'auditeur au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "LS" est dérivé du terme anglais développé correspondant "left surround".

3.10

droit ambiophonique

RS

position de haut-parleur située du côté droit légèrement derrière l'auditeur au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "RS" est dérivé du terme anglais développé correspondant "right surround".

3.11

centre avant gauche

FLc

position de haut-parleur située à l'avant gauche au centre au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FLc" est dérivé du terme anglais développé correspondant "front left centre".

3.12**centre avant droit****FRc**

position de haut-parleur située à l'avant droit au centre au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FRc" est dérivé du terme anglais développé correspondant "front right centre".

3.13**arrière centre****BC**

position de haut-parleur située à l'arrière centre au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "BC" est dérivé du terme anglais développé correspondant "back centre".

3.14**effets à basses fréquences 1****LFE1**

position du haut-parleur LFE située au niveau bas et normalement à l'extrême avant gauche

Note 1 à l'article: Le terme abrégé "LFE1" est dérivé du terme anglais développé correspondant "low-frequency effects 1".

3.15**latéral gauche****SiL**

position de haut-parleur située du côté gauche au niveau intermédiaire

Note 2 à l'article: Le terme abrégé "SiL" est dérivé du terme anglais développé correspondant "side left".

3.16**latéral droit****SiR**

position de haut-parleur située du côté droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "SiR" est dérivé du terme anglais développé correspondant "side right".

3.17**supérieur avant gauche****HFL**

position de haut-parleur située à l'avant gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFL" est dérivé du terme anglais développé correspondant "high front left".

3.18**supérieur avant droit****HFR**

position de haut-parleur située à l'avant droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFR" est dérivé du terme anglais développé correspondant "high front right".

3.19**supérieur avant centre****HFC**

position de haut-parleur située à l'avant centre au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFC" est dérivé du terme anglais développé correspondant "high front centre".

3.20**plafond centre****OhC**

position de haut-parleur située au centre au niveau plafond directement au-dessus de la zone où les spectateurs sont assis

Note 1 à l'article: Le terme abrégé "OhC" est dérivé du terme anglais développé correspondant "overhead centre".

3.21

supérieur gauche ambiophonique

HLS

position de haut-parleur située à gauche légèrement derrière l'auditeur au niveau supérieur

Note 1 à l'article: Le terme abrégé "HLS" est dérivé du terme anglais développé correspondant "high left surround".

3.22

supérieur droit ambiophonique

HRS

position de haut-parleur située à droite légèrement derrière l'auditeur au niveau supérieur

Note 1 à l'article: Le terme abrégé "HRS" est dérivé du terme anglais développé correspondant "high right surround".

3.23

supérieur latéral gauche

HSiL

position de haut-parleur située du côté gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HSiL" est dérivé du terme anglais développé correspondant "high side left".

3.24

supérieur latéral droit

HSiR

position de haut-parleur située du côté droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HSiR" est dérivé du terme anglais développé correspondant "high side right".

3.25

supérieur arrière centre

HBC

position de haut-parleur située à l'arrière centre au niveau supérieur

Note 1 à l'article: Le terme abrégé "HBC" est dérivé du terme anglais développé correspondant "high back centre".

3.26

bas avant centre

BtFC

position de haut-parleur située à l'avant centre au niveau bas

Note 1 à l'article: Le terme abrégé "BtFC" est dérivé du terme anglais développé correspondant "bottom front centre".

3.27

bas avant gauche intermédiaire

BtFLmid

position de haut-parleur située à l'avant gauche au niveau bas

Note 1 à l'article: Le terme abrégé "BtFLmid" est dérivé du terme anglais développé correspondant "bottom front left middle".

3.28

bas avant droit intermédiaire

BtFRmid

position de haut-parleur située à l'avant droit au niveau bas

Note 1 à l'article: Le terme abrégé "BtFRmid" est dérivé du terme anglais développé correspondant "bottom front right middle".

3.29**avant gauche large****FLw**

position de haut-parleur située à l'extrême avant gauche au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FLw" est dérivé du terme anglais développé correspondant "front left wide".

3.30**avant droit large****FRw**

position de haut-parleur située à l'extrême avant droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FRw" est dérivé du terme anglais développé correspondant "front right wide".

3.31**arrière gauche****BL**

position de haut-parleur située à l'arrière gauche au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "BL" est dérivé du terme anglais développé correspondant "back left".

3.32**arrière droit****BR**

position de haut-parleur située à l'arrière droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "BR" est dérivé du terme anglais développé correspondant "back right".

3.33**gauche arrière ambiophonique****LBS**

position de haut-parleur située à mi-chemin entre LS et BL au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "LBS" est dérivé du terme anglais développé correspondant "left back surround".

3.34**droit arrière ambiophonique****RBS**

position de haut-parleur située à mi-chemin entre RS et BR au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "RBS" est dérivé du terme anglais développé correspondant "right back surround".

3.35**supérieur arrière gauche****HBL**

position de haut-parleur située à l'arrière gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HBL" est dérivé du terme anglais développé correspondant "high back left".

3.36**supérieur arrière droit****HBR**

position de haut-parleur située à l'arrière droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HBR" est dérivé du terme anglais développé correspondant "high back right".

3.37**supérieur avant gauche large****HFLw**

position de haut-parleur située à l'extrême avant gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFLw" est dérivé du terme anglais développé correspondant "high front left wide".

3.38

supérieur avant droit large

HFRw

position de haut-parleur située à l'extrême avant droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFRw" est dérivé du terme anglais développé correspondant "high front Right wide".

3.39

plafond avant gauche

OhFL

position de haut-parleur située à l'avant gauche au niveau plafond

Note 1 à l'article: Le terme abrégé "OhFL" est dérivé du terme anglais développé correspondant "overhead front left".

3.40

plafond avant droit

OhFR

position de haut-parleur située à l'avant droit au niveau plafond

Note 1 à l'article: Le terme abrégé "OhFR" est dérivé du terme anglais développé correspondant "overhead front right".

3.41

plafond latéral gauche

OhSiL

position de haut-parleur située du côté gauche au niveau plafond

Note 1 à l'article: Le terme abrégé "OhSiL" est dérivé du terme anglais développé correspondant "overhead side left".

3.42

plafond latéral droit

OhSiR

position de haut-parleur située du côté droit au niveau plafond

Note 1 à l'article: Le terme abrégé "OhSiR" est dérivé du terme anglais développé correspondant "overhead side right".

3.43

plafond arrière gauche

OhBL

position de haut-parleur située à l'arrière gauche au niveau plafond

Note 1 à l'article: Le terme abrégé "OhBL" est dérivé du terme anglais développé correspondant "overhead back left".

3.44

plafond arrière droit

OhBR

position de haut-parleur située à l'arrière droit au niveau plafond

Note 1 à l'article: Le terme abrégé "OhBR" est dérivé du terme anglais développé correspondant "overhead back right".

3.45

supérieur avant gauche intermédiaire

HFLmid

position de haut-parleur située à l'intermédiaire avant gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFLmid" est dérivé du terme anglais développé correspondant "high front left middle".

3.46

supérieur avant droit intermédiaire

HFRmid

position de haut-parleur située à l'intermédiaire avant droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HFRmid" est dérivé du terme anglais développé correspondant "high front right middle".

3.47

supérieur arrière gauche intermédiaire

HBLmid

position de haut-parleur située à l'intermédiaire arrière gauche au niveau supérieur

Note 1 à l'article: Le terme abrégé "HBLmid" est dérivé du terme anglais développé correspondant "high back left middle".

3.48

supérieur arrière droit intermédiaire

HBRmid

position de haut-parleur située à l'intermédiaire arrière droit au niveau supérieur

Note 1 à l'article: Le terme abrégé "HBRmid" est dérivé du terme anglais développé correspondant "high back right middle".

3.49

avant gauche intermédiaire

FLmid

position de haut-parleur située à l'intermédiaire avant gauche au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FLmid" est dérivé du terme anglais développé correspondant "front left middle".

3.50

avant droit intermédiaire

FRmid

position de haut-parleur située à l'intermédiaire avant droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "FRmid" est dérivé du terme anglais développé correspondant "front right middle".

3.51

arrière gauche intermédiaire

BLmid

position de haut-parleur située à l'intermédiaire arrière gauche au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "BLmid" est dérivé du terme anglais développé correspondant "back left middle".

3.52

arrière droit intermédiaire

BRmid

position de haut-parleur située à l'intermédiaire arrière droit au niveau intermédiaire

Note 1 à l'article: Le terme abrégé "BRmid" est dérivé du terme anglais développé correspondant "back right middle".

3.53

effets à basses fréquences 2

LFE2

position LFE de haut-parleur située au niveau bas et normalement à l'extrême avant droite, lorsque la voie LFE1 est utilisée

Note 1 à l'article: Le terme abrégé "LFE2" est dérivé du terme anglais développé correspondant "low frequency effects 2".

3.54

plafond arrière centre

OhBC

position de haut-parleur située à l'arrière centre au niveau plafond

Note 1 à l'article: Le terme abrégé "OhBC" est dérivé du terme anglais développé correspondant "overhead back centre".

3.55

affichage gauche

DL

position de haut-parleur située au bord gauche du niveau intermédiaire sur l'affichage

Note 1 à l'article: Le terme abrégé "DL" est dérivé du terme anglais développé correspondant "display left".

3.56

affichage droit

DR

position de haut-parleur située au bord droit du niveau intermédiaire sur l'affichage

Note 1 à l'article: Le terme abrégé "DR" est dérivé du terme anglais développé correspondant "display right".

3.57

affichage gauche centre

DLc

position de haut-parleur située à mi-chemin entre le centre de l'affichage et le bord gauche du niveau intermédiaire sur l'affichage

Note 2 à l'article: Le terme abrégé "DLc" est dérivé du terme anglais développé correspondant "display left centre".

3.58

affichage droit centre

DRc

position de haut-parleur située à mi-chemin entre le centre de l'affichage et le bord droit du niveau intermédiaire sur l'affichage

Note 1 à l'article: Le terme abrégé "DRc" est dérivé du terme anglais développé correspondant "display right centre".

3.59

affichage centre

DC

position de haut-parleur située au centre de l'affichage

Note 1 à l'article: Le terme abrégé "DC" est dérivé du terme anglais développé correspondant "display centre".

3.60

supérieur affichage gauche

HDL

position de haut-parleur située au bord gauche du niveau supérieur sur l'affichage

Note 1 à l'article: Le terme abrégé "HDL" est dérivé du terme anglais développé correspondant "high display left".

3.61

supérieur affichage droit

HDR

position de haut-parleur située au bord droit du niveau supérieur sur l'affichage

Note 1 à l'article: Le terme abrégé "HDR" est dérivé du terme anglais développé correspondant "high display right".

3.62**supérieur affichage gauche centre****HDLc**

position de haut-parleur située à mi-chemin entre le centre de l'affichage et le bord gauche du niveau supérieur sur l'affichage

Note 1 à l'article: Le terme abrégé "HDLc" est dérivé du terme anglais développé correspondant "high display left centre".

3.63**supérieur affichage droit centre****HDRc**

position de haut-parleur située à mi-chemin entre le centre de l'affichage et le bord droit du niveau supérieur sur l'affichage

Note 1 à l'article: Le terme abrégé "HDRc" est dérivé du terme anglais développé correspondant "high display right centre".

3.64**supérieur affichage centre****HDC**

position de haut-parleur située au centre du niveau supérieur sur l'affichage

Note 1 à l'article: Le terme abrégé "HDC" est dérivé du terme anglais développé correspondant "high display centre".

3.65**bas affichage gauche****BtDL**

position de haut-parleur située au bord gauche du niveau bas sur l'affichage

Note 1 à l'article: Le terme abrégé "BtDL" est dérivé du terme anglais développé correspondant "bottom display left".

3.66**bas affichage droit****BtDR**

position de haut-parleur située au bord droit du niveau bas sur l'affichage

Note 1 à l'article: Le terme abrégé "BtDR" est dérivé du terme anglais développé correspondant "bottom display right".

3.67**bas affichage gauche centre****BtDLc**

position de haut-parleur située à mi-chemin entre le centre de l'affichage et bord gauche du niveau bas sur l'affichage

Note 1 à l'article: Le terme abrégé "BtDLc" est dérivé du terme anglais développé correspondant "bottom display left centre".

3.68**bas affichage droit centre****BtDRc**

position de haut-parleur située à mi-chemin entre le centre de l'affichage et le bord droit du niveau bas sur l'affichage

Note 1 à l'article: Le terme abrégé "BtDRc" est dérivé du terme anglais développé correspondant "bottom display right centre".

3.69**bas affichage centre****BtDC**

position de haut-parleur située au centre du niveau bas sur l'affichage

Note 1 à l'article: Le terme abrégé "BtDC" est dérivé du terme anglais développé correspondant "bottom display centre".

3.70

affectation des voies

l'affectation du format audio à voies multiples, en incluant la configuration des haut-parleurs, l'installation des haut-parleurs, le nom de voie, l'étiquette de voie, l'ID de voie et l'ordre des voies pour la transmission et l'enregistrement

Note 1 à l'article: L'affectation des voies exclut la spécification de la position exacte de chaque haut-parleur.

3.71

affectation des voies sur l'affichage

affectation des voies pour les haut-parleurs sur l'écran

Note 1 à l'article: "Haut-parleur sur l'écran" est défini comme "sur l'affichage".

3.72

numéro de voie

numérotation de chaque voie

3.73

ID d'étiquette de voie

étiquette de l'ID

3.74

configuration de haut-parleurs

informations à propos du nombre de haut-parleurs au niveau plafond, du nombre de haut-parleurs au niveau supérieur, du nombre de haut-parleurs au niveau intermédiaire, du nombre de haut-parleurs au niveau bas et du nombre de haut-parleurs LFE

Note 1 à l'article: Les termes "haut-parleur" et "configuration de haut-parleurs" désignent tous deux des haut-parleurs.

Note 2 à l'article: La configuration stéréophonique, par exemple, est décrite par 0.0.2.0.0, la configuration 5.1ch par 0.0.5.0.1 et la configuration 22.2ch par 1.8.10.3.2.

3.75

position de haut-parleur

information de position de haut-parleur, indiquée par l'azimut, l'élévation et la distance

3.76

direction de haut-parleur

direction centrale du diagramme de réponse indiquée par l'azimut et l'inclinaison

3.77

diagramme de directivité

diagramme de directivité pour haut-parleur

Note 1 à l'article: Voir l'IEC 60268-5.

3.78

plage de fréquences

étendue de la fréquence la plus basse à la fréquence la plus élevée sur laquelle un haut-parleur est capable, ou il convient qu'un haut-parleur soit capable, d'assurer une reproduction sonore satisfaisante

3.79

caisson de graves

haut-parleur servant à la reproduction du son aux basses fréquences

3.80**dialogue**

informations pour des commentaires (parole)

3.81**écran**

surface sur laquelle apparaît une image, située à l'avant de l'auditeur au niveau intermédiaire

4 Affectation générale des voies**4.1 Généralités**

L'affectation des voies ou canaux (channel assignment) spécifie les voies ou canaux de l'audio à voies multiples, l'affectation des haut-parleurs (loudspeaker assignment) la position géométrique des haut-parleurs.

4.2 Modèle

La Figure 1 montre le modèle spatial d'affectation des voies avec ses quatre niveaux, en supposant un auditeur au centre du niveau bas. Le niveau intermédiaire est, en hauteur, au centre de l'écran vidéo ou sinon à la même hauteur que l'oreille de l'auditeur.

Ce modèle spécifie l'affectation générale des voies dans ces quatre niveaux, qui sont les niveaux plafond, supérieur, intermédiaire et bas. Chaque niveau spécifie des voies à son propre niveau.

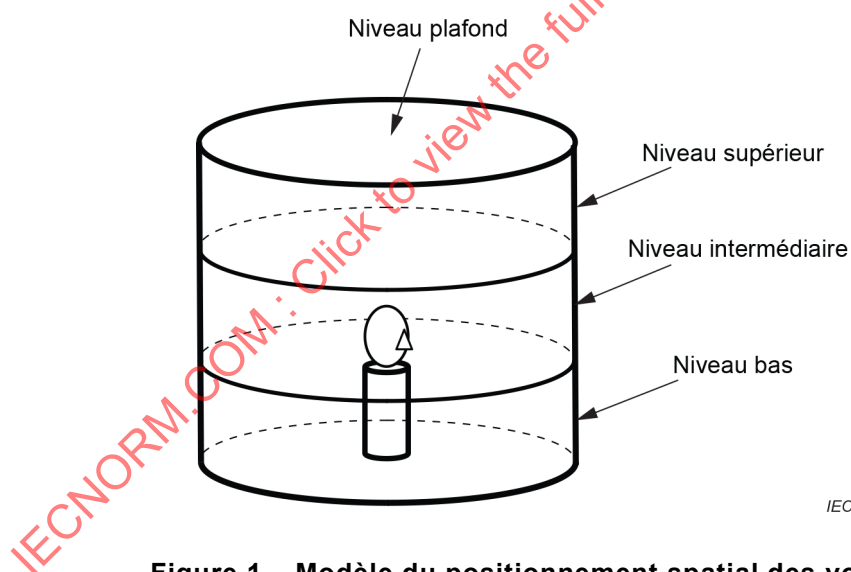


Figure 1 – Modèle du positionnement spatial des voies

La Figure 2 montre le niveau plafond avec ses affectations de voies, la Figure 3 le niveau supérieur avec ses affectations de voies, la Figure 4 le niveau intermédiaire avec ses affectations de voies, la Figure 5 le niveau bas avec ses affectations des voies et la Figure 6 l'affectation des voies sur l'affichage.

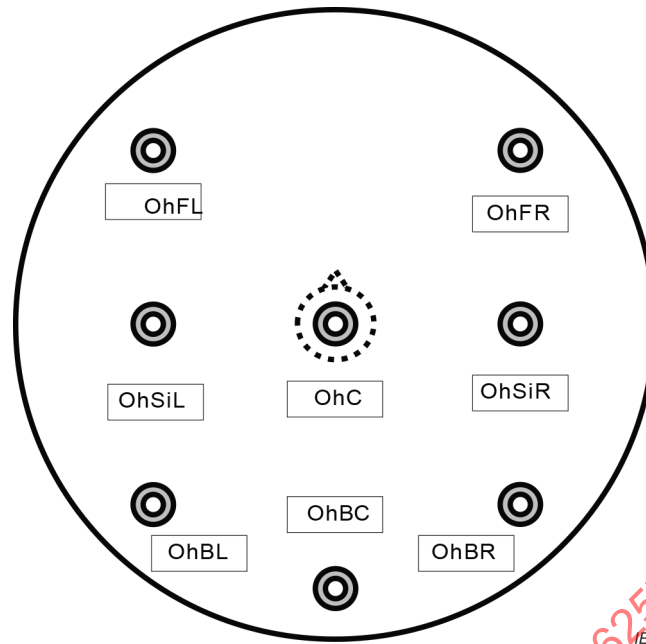


Figure 2 – Niveau plafond

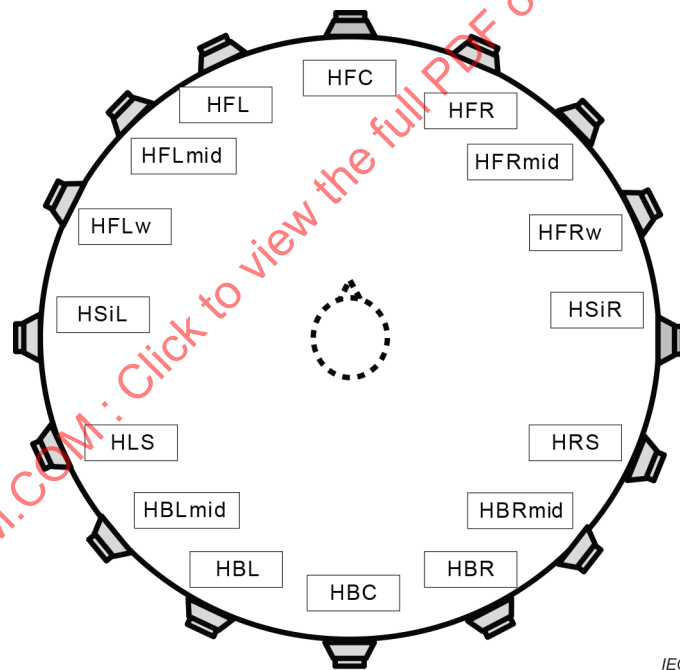
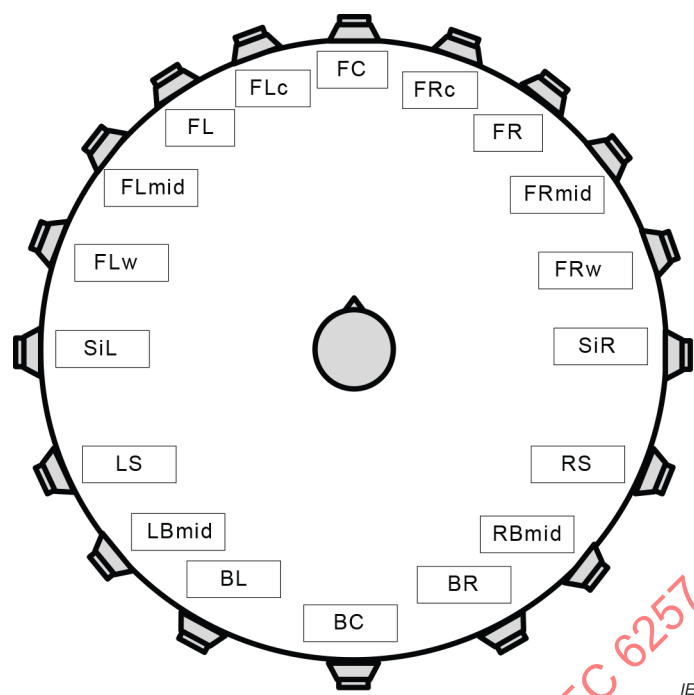
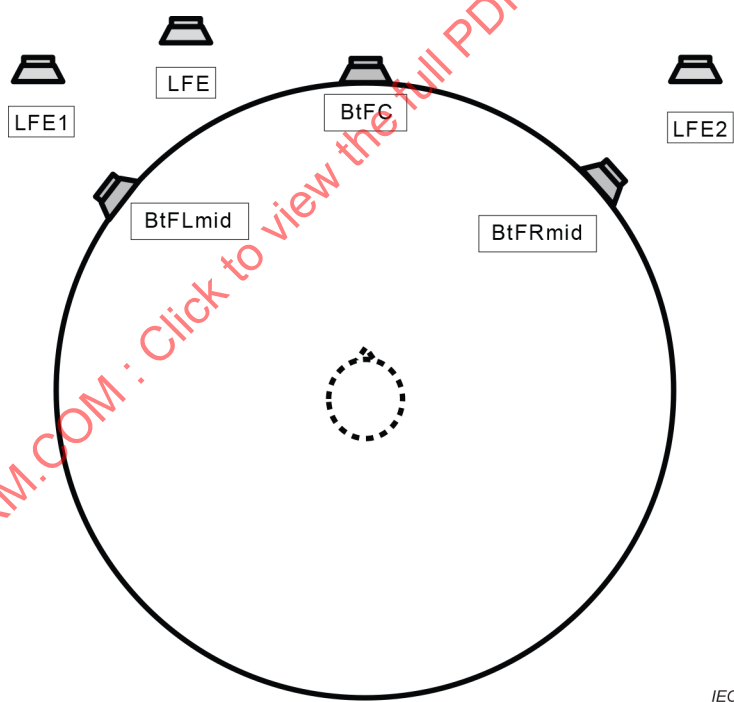


Figure 3 – Niveau supérieur

**Figure 4 – Niveau intermédiaire****Figure 5 – Niveau bas**

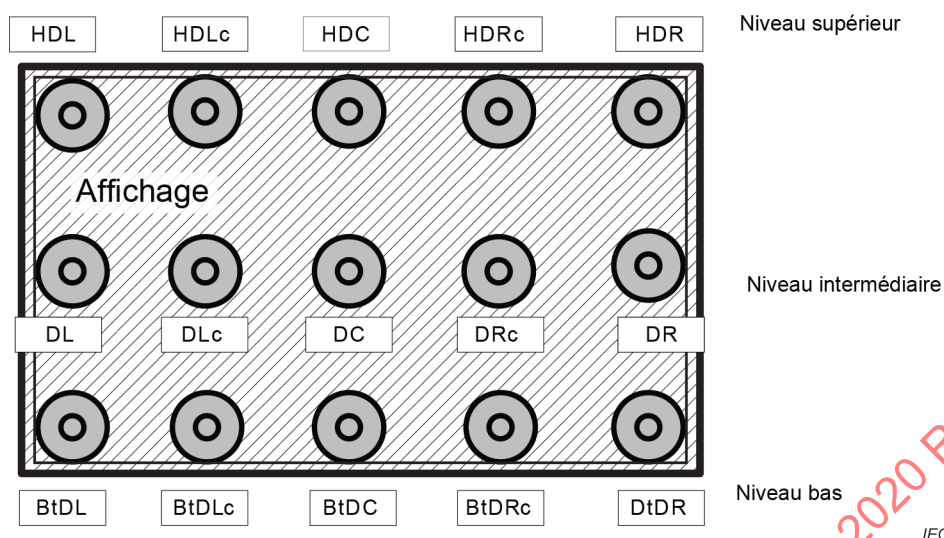


Figure 6 – Affectation des voies sur l'affichage

4.3 Mappings ou affectations des voies et leurs étiquettes

Le Tableau 1 montre la définition des mappings ou affectations des voies et les étiquettes des voies de ces affectations générales de voies. Les étiquettes de voies possèdent un identificateur (ID) qui est une désignation abrégée pour chacune d'elles. Chaque nom est sensible à la casse.

Tableau 1 – Affectation générale des voies

Niveau	Numéro de voie	ID d'étiquette de voie	Développé de l'ID
Intermédiaire	65	FL	Avant gauche
Intermédiaire	66	FR	Avant droit
Intermédiaire	67	FC	Avant centre
Bas	68	LFE	Effets à basses fréquences
Intermédiaire	69	LS	Gauche ambiophonique
Intermédiaire	70	RS	Droit ambiophonique
Intermédiaire	71	FLc	Centre avant gauche
Intermédiaire	72	FRc	Centre avant droit
Intermédiaire	73	BC	Arrière centre
Bas	74	LFE1	Effets à basses fréquences 1
Intermédiaire	75	SiL	Latéral gauche
Intermédiaire	76	SiR	Latéral droit
Élevé	77	HFL	Supérieur avant gauche
Élevé	78	HFR	Supérieur avant droit
Élevé	79	HFC	Supérieur avant centre
Plafond	80	OhC	Plafond centre
Élevé	81	HLS	Supérieur gauche ambiophonique
Élevé	82	HRS	Supérieur droit ambiophonique
Élevé	83	HSiL	Supérieur latéral gauche
Élevé	84	HSiR	Supérieur latéral droit
Élevé	85	HBC	Supérieur arrière centre

Niveau	Numéro de voie	ID d'étiquette de voie	Développé de l'ID
Bas	86	BtFC	Bas avant centre
Bas	87	BtFLmid	Bas avant gauche intermédiaire
Bas	88	BtFRmid	Bas avant droit intermédiaire
Intermédiaire	89	FLw	Avant gauche large
Intermédiaire	90	FRw	Avant droit large
Intermédiaire	91	BL	Arrière gauche
Intermédiaire	92	BR	Arrière droit
Intermédiaire	93	LBS	Gauche arrière ambiophonique
Intermédiaire	94	RBS	Droit arrière ambiophonique
Élevé	95	HBL	Supérieur arrière gauche
Élevé	96	HBR	Supérieur arrière droit
Élevé	97	HFLw	Supérieur avant gauche large
Élevé	98	HFRw	Supérieur avant droit large
Plafond	99	OhFL	Plafond avant gauche
Plafond	100	OhFR	Plafond avant droit
Plafond	101	OhSiL	Plafond latéral gauche
Plafond	102	OhSiR	Plafond latéral droit
Plafond	103	OhBL	Plafond arrière gauche
Plafond	104	OhBR	Plafond arrière droit
Élevé	105	HFLmid	Supérieur avant gauche intermédiaire
Élevé	106	HFRmid	Supérieur avant droit intermédiaire
Élevé	107	HBLmid	Supérieur arrière gauche intermédiaire
Élevé	108	HBRmid	Supérieur avant droit large
Intermédiaire	109	FLmid	Avant gauche intermédiaire
Intermédiaire	110	FRmid	Avant droit intermédiaire
Intermédiaire	111	BLmid	Arrière gauche intermédiaire
Intermédiaire	112	BRmid	Arrière droit intermédiaire
Bas	113	LFE2	Effets à basses fréquences 2
Plafond	114	OhBC	Plafond arrière centre
Affectation des voies sur l'affichage			
Affichage	151	DL	Affichage gauche
Affichage	152	DR	Affichage droit
Affichage	153	DLc	Affichage gauche centre
Affichage	154	DRc	Affichage droit centre
Affichage	155	DC	Affichage centre
Affichage	156	HDL	Supérieur affichage gauche
Affichage	157	HDR	Supérieur affichage droit
Affichage	158	HDLc	Supérieur affichage gauche centre
Affichage	159	HDRc	Supérieur affichage droit centre
Affichage	160	HDC	Supérieur affichage centre
Affichage	161	BtDL	Bas affichage gauche
Affichage	162	BtDR	Bas affichage droit
Affichage	163	BtDLc	Bas affichage gauche centre