

E-resources on portable storage devices

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Introduction

Electronic files are often held on physical storage devices such as CD-ROMs, DVD-ROMs, flash drives (also known as memory sticks), portable hard drives and memory cards. Because the ranges both of file types and of storage devices are ever increasing and it is now quite common for a single electronic carrier to hold a wide range of electronic content, it is not practical to produce documentation for every combination. This documentation therefore deals with contents and carriers separately, offering guidance first about choosing and using the elements required for each type of content and then about the elements required for each type of carrier.

Note: Both RDA and MARC require specific terms or codes to be used for various elements of content and carrier information, so this documentation includes a number of references and links to their lists of available values. For help with navigating the MARC Standards, see Appendix 1 of [RDA/MARC21 Module 5](#); for help with navigating the RDA Toolkit, see [RDA structure and the RDA Toolkit](#).

Scope

These guidelines are for devices which require computers (including tablets, smartphones, smart TVs and games consoles) for playback or which have integral computer playback devices (e.g. e-readers).

- They apply only if the content of the device is longterm or permanent. Devices with variable content should be catalogued as pieces of equipment.¹
- They do not cover devices which are suitable for playback on ordinary audio or video equipment, e.g. standard-sized discs with files in CD-audio or MP3 or DVD-video or Blu-ray format, whether commercial or home-produced. For these, see [Sound recordings](#) and [Videorecordings](#). Unfortunately, the distinction between computer, audio and video media is becoming hard to maintain, since audio and video players are often designed to accommodate file formats originally developed for computers (such as WMA) and some can accept input from memory cards, flash drives, etc. In some cases you may have to trust your sense of whether or not it would be 'normal' for the device to be played back on a dedicated audio or video player.
- They do not cover MP3 players, playaway devices and similar audio devices, which should be catalogued either as pieces of equipment (if the content is variable) or as sound recordings (if the content is permanent).
- They can be used for locally-produced resources, e.g. collections of standard texts loaded on an e-reader under license or collections of public-domain documents on a CD; but please bear in mind when choosing your template that such resources are seldom worth more than a brief record and should normally be assigned an RTP field which prevents export.

Downloading external records

'Best practice' for electronic resources in RDA is taking a long time to develop, particularly with respect to the new 34X fields, so it is best to check all downloaded records fairly thoroughly, even full-level records from the British National Bibliography and the Library of Congress.

Elements for contents

For some types of content, e.g. sound recordings, videos, cartographic material, offprints, theses and 'grey' material, you may need to consult other [OLIS documentation](#) for more specific help with choosing templates and 008 (or 006) values and creating the various special fields required for these types of content.

¹ For a simple way to do this, see [Quick Reference Guide – Equipment Records](#).

Sources of information

- If the predominant content consists of **one or more pages, leaves, sheets or cards** (or images of these) on a portable electronic storage device, prefer (i) a permanent eye-readable label, if there is one, then (ii) the title page, title sheet or title card, then (iii) a cover or jacket, (iv) a caption, (v) a masthead, (vi) a colophon, (vii) another source on the resource in which the information is formally presented.
- If the predominant content consists of **moving images**, the preferred source for full-level records is title frame or title screen and, failing this, a permanent label or embedded metadata; but most OLIS records for videos use a local, level-7 standard, for which the preferred sources are labels on the resource, its case, or accompanying material.
- For **other** resources the preferred source is a permanent label or embedded metadata. In full-level records a 500 note should always be made for the source of title, even if a preferred source is used.
- For multipart sets, prefer a source which identifies the resource as a whole. This is often a case or box.
- Information from containers and accompanying material *if issued as part of the resource* does not require square brackets.

Formats and templates

- The record's format is usually set by the template used to create it, so it is very important to choose an appropriate template.
- The format, and therefore the template, should reflect the predominant *content* of the resource rather than its carrier.
- The available formats are: CF (Computer Files); BK (Books); MP (Maps); MU (Music); SE or CR (Serials/ Continuing resources); VM (Visual materials); MX (Mixed materials).
 - CF is used for computer software (including programs, games, fonts), most numerical data (if the file is of a type suitable for computer manipulation rather than mere reading, e.g. Excel), computer-oriented multimedia, and any doubtful cases.
 - BK is suitable for almost all electronic documents. It is used for all textual resources except serials, and for numerical resources as long as the file type is one designed for reading (or writing) rather than for computer manipulation, e.g. a Word file containing numerical tables. Commonplace navigation aids such as hyperlinks and search engines can be ignored, as can subordinate material such as illustrations, maps, embedded spreadsheets and minor interactive elements.
 - MP is used for maps and other cartographic resources, including cartographic photographs and numerical data such as cartographic vector data.
 - MU is used for all written or printed music and all sound recordings, even nonmusical recordings.
 - VM is used for resources consisting predominantly of images, including videos. Although VM is also the normal format for multimedia sets, it is not used for multimedia whose main carrier is electronic; these use CF.
 - CR (which Aleph calls by the older term 'SE') is used for all serials and continuing resources, whatever the nature of the content.
 - MX format is only for 'made-up' sets such as archival collections, so we do not use it.

- The format controls:
 - which values are available for LDR/06 (Type of Record; see below)
 - the meaning of positions 18-34 in 008. For instance, if the format is BK, positions 18-21 contain codes for types of illustration; but if the format is MP they contain codes for types of relief.
- It is possible to Change Record's Format from Aleph's Edit Actions menu, and you will need to do this if you ever have to edit a record which was originally created in the wrong format, e.g. if a set of electronic documents was catalogued in CF format. Changing the format will redefine 008 positions 18-34, so you will need to edit these positions as well as LDR/06.²
- Various Aleph templates are available, depending on the content and on the level of detail required. However, you will always have to add extra elements and change some values when the carrier is an electronic storage device.
 - Although there is a template specifically for those electronic storage devices which require CF format, *cfdevicerda.mrc*, it does not contain many fields or default values because of the range of possible carriers and content.
 - Other templates will need at least 007, 008/23 or 29 (Form of item), 300 \$a, 337 and 338 changed to reflect the carrier, and they may also need changes to reflect content.
- If you frequently create records for e-storage devices of a particular type, it is worth customising a template for your own use. See the relevant section in <http://www.bodleian.ox.ac.uk/staff/resources/olissupport/docs/cat/aleph/CatModuleMARC.pdf>.

LDR/06

- This position in the Leader field adds a little more detail to the format. For instance, if the format is MU (Music) the valid values are 'c' (Notated music), 'd' (Manuscript notated music), 'i' (Nonmusical sound recording) and 'j' (Musical sound recording). These codes are sometimes used to help with generating icons, filters or facets in public-facing interfaces.
- If the format is CF, the only value available for LDR/06 is 'm' (= computer file).
- Aleph provides a dropdown list of values, but for a list with definitions, see the [MARC Standards](#).

008: Fixed length data elements

- The first (00-17) and last (35-39) positions of 008 are the same whatever the format; but the middle (18-34) positions vary depending on the format. You can find full lists and definitions of these positions and of the available values in the [MARC Standards](#).
- If the resource has a mixture of files or predominantly contains software or numerical data for manipulation, you will be using CF format.
 - This has an important 'Type of computer file' position (008/26), with the following values available:
a – Numeric data f - Font i – Interactive multimedia u - Unknown

² It sometimes happens that an 008 position in which a value was entered in the original format is 'undefined' in the new format, and therefore impossible to edit. In that case you would need to create a new 008 field (add the field in the usual way, and then use Ctrl+F to open the form) and delete the old one.

b – Computer program g - Game m - Combination z - Other³

- Most of the other middle values for CF format are undefined.
- The 'Form of item' position reflects the carrier, so is covered in the next section.

006: Fixed-Length Data Elements - Additional Material Characteristics

- Sometimes the single set of format-specific middle values in the 008 field is not enough, either because the resource has important components in different formats, e.g. a CD-ROM with a DVD-video, or because it has multiple aspects, e.g. a serial that is also a sound recording. In that case you should add 006 fields. These begin with an 00 position which holds a code for the form of material (with the same options as for LDR/06) and this is followed by all the positions you would find in 008/18-34 for that material.
- If the record is not in CF format, you must provide an 006 field with the 00 value 'm' (= 'computer'). This is required by OCLC and some other utilities, to help identify electronic media.
- To add an 006 field, enter the field tag in the usual way and use Ctrl-F to open the form. You will first be asked to choose the value for 006/00, since this determines the meaning of the other positions.
 - For videos, use 'g' (= Projected medium)
 - For static images use 'k' (=Two-dimensional non-projectable graphic)
- All the other positions in the new field, apart from undefined ones, have by default the value '|' (= no attempt to code). There is no need to enter specific values, although you may if you think them important. Often the form of material, which, like LDR/06, may be used in filters and facets, is the only value worth recording.

300 \$b: Other physical characteristics

- Provide information about illustrations, sound, colour, etc., in the usual way, as appropriate to the type of content.


```
300 __ $a1 CD-ROM (60 minutes) :$bsound, colour.
```

```
300 __ $a1 CD-ROM (approximately 400 pages) :$bcolour illustrations.
```
- For mixed files and multimedia record 'sound' and/or 'colour' only if these are important features.
- Do not record information such as 'digital' or 'PDF'; this will be recorded in the 34X fields.
- For 300 \$a and \$c, see under 'Elements for carriers'.

336: Content Type

- Provide as many 336 fields as you judge necessary to represent all the important types of content in the resource, including any important accompanying material. Your template will provide at least one value, but you may need to change it or add others.
- Although it is common for the 336 fields in a record to correspond more or less to its 008 and 006 fields, this is not the case for electronic mixed files or multimedia, because the CF-format 008 offers

³ It also offers 'Representational' and 'Document', which are puzzling, because computer resources consisting of images or documents should use VM or BK format respectively. In fact these values are listed only because exactly the same list is used in the corresponding position of 'computer' 006 fields, which may occur in VM or BK records.

in position 26 values for Combination, Game or Interactive multimedia, but 336 has no value available for mixed content, and so separate 336 fields are needed for each type.

For a CD-ROM containing text documents, a database, videos and maps:

[BK format, with 006 fields for 'Computer files', 'Projected medium' and 'Cartographic material']

336 __ \$atext\$2rdacontent
 336 __ \$acomputer dataset\$2rdacontent
 336 __ \$atwo-dimensional moving image\$2rdacontent
 336 __ \$acartographic image\$2rdacontent

For a 3-D videogame with accompanying instruction book:

[CF format, with no 006 fields; 008/26 = g)

336 __ \$athree-dimensional moving image\$2rdacontent
 336 __ \$acomputer program\$2rdacontent
 336 __ \$atext\$2rdacontent

- Aleph has a useful picklist for 336 values. Click in the field and key Ctrl+F8.
- For a full and up-to-date list of values, see RDA 6.9.1.3. The applicable values available as at March 2015 are:

cartographic dataset	Cartographic content expressed through a digitally encoded dataset intended to be processed by a computer. For cartographic data intended to be perceived in the form of an image or three-dimensional form, see <i>cartographic image</i> , <i>cartographic moving image</i> , <i>cartographic tactile image</i> , <i>cartographic tactile three-dimensional form</i> , and <i>cartographic three-dimensional form</i> .
cartographic image	Cartographic content expressed through line, shape, shading, etc., intended to be perceived visually as a still image or images in two dimensions. Includes maps, views, atlases, remote-sensing images, etc.
cartographic moving image	Cartographic content expressed through images intended to be perceived as moving, in two dimensions. Includes satellite images of the Earth or other celestial bodies in motion.
cartographic three-dimensional form	Cartographic content expressed through a form or forms intended to be perceived visually in three-dimensions. Includes globes, relief models, etc.
computer dataset	Content expressed through a digitally encoded dataset intended to be processed by a computer. Includes numeric data, environmental data, etc., used by applications software to calculate averages, correlations, etc., or to produce models, etc., but not normally displayed in its raw form. For data intended to be perceived visually in the form of notation, image, or three-dimensional form, see <i>notated movement</i> , <i>notated music</i> , <i>still image</i> , <i>text</i> , <i>three-dimensional form</i> , <i>three-dimensional moving image</i> , and <i>two-dimensional moving image</i> . For data intended to be perceived in an audible form, see <i>performed music</i> , <i>sounds</i> , and <i>spoken word</i> . For cartographic data see <i>cartographic dataset</i> .

computer program	Content expressed through digitally encoded instructions intended to be processed and performed by a computer. Includes operating systems, applications software, etc.
notated movement	Content expressed through a form of notation for movement intended to be perceived visually. Includes all forms of movement notation other than those intended to be perceived through touch (see <i>tactile notated movement</i>).
notated music	Content expressed through a form of musical notation intended to be perceived visually. Includes all forms of musical notation other than those intended to be perceived through touch (see <i>tactile notated music</i>).
performed music	Content expressed through music in an audible form. Includes recorded performances of music, computer-generated music, etc.
sounds	Content other than language or music, expressed in an audible form. Includes natural sounds, artificially produced sounds, etc.
spoken word	Content expressed through language in an audible form. Includes recorded readings, recitations, speeches, interviews, oral histories, etc., computer-generated speech, etc.
still image	Content expressed through line, shape, shading, etc., intended to be perceived visually as a still image or images in two dimensions. Includes drawings, paintings, diagrams, photographic images (stills), etc. For cartographic content intended to be perceived as a two-dimensional image, see <i>cartographic image</i> . For images intended to be perceived through touch, see <i>tactile image</i> .
text	Content expressed through a form of notation for language intended to be perceived visually. Includes all forms of language notation other than those intended to be perceived through touch (see <i>tactile text</i>).
three-dimensional form	Content expressed through a form or forms intended to be perceived visually in three-dimensions. Includes sculptures, models, naturally occurring objects and specimens, holograms, etc. For cartographic content intended to be perceived as a three-dimensional form, see <i>cartographic three-dimensional form</i> . For three-dimensional forms intended to be perceived through touch, see <i>tactile three-dimensional form</i> .
three-dimensional moving image	Content expressed through images intended to be perceived as moving, in three dimensions. Includes 3-D motion pictures (using live action and/or animation), 3-D video games, etc. Three-dimensional moving images may or may not be accompanied by sound.
two-dimensional moving image	Content expressed through images intended to be perceived as moving, in two dimensions. Includes motion pictures (using live action and/or animation), film and video recordings of performances, events, etc., video games, etc., other than those intended to be perceived in three dimensions (see <i>three-dimensional moving image</i>). Moving images may or may not be accompanied by sound. For cartographic content intended to be perceived as a two-dimensional moving image, see <i>cartographic moving image</i> .

500, 505, 506, 520 and 540: Notes about content, access and use

- Full-level records whose content consists neither of pages, leaves or sheets (or images of these) nor of moving images should always have a 500 note for the source of title, even if a preferred source (i.e., a permanent label or embedded metadata) is used. The cfdevicerda template includes a 500 note with the text "Title from" as a prompt.
- If you are dealing with complex or multimedia material, please record in a note any information about its nature and purpose which is readily available and likely to be useful for selection. Use whichever is most appropriate of fields 500 (General), 505 (Contents – suitable only if the components have titles) or 520 (Summary).

520 __ \$aContains PDF worksheets, PowerPoint slides, interactive quizzes and editable lesson plans.

- If the device contains material added locally under license or special permissions and/or there are restrictions on access, make a 506 note (with 1st indicator =1 if there are restrictions on access).

506 1_ \$aMade available by author. Users must sign sheet at enquiry desk.

- Please also record in a 540 note any readily available information about whether users are permitted to print out or copy files, making clear whether any permissions apply to all users or only to purchasers.

540 __ \$aPDF worksheets may be printed out for non-commercial use only by purchasers of the resource.

6XX: Library of Congress Subject Headings

- LCSH for the subject matter of the resource should be assigned in the usual way, but with the addition of appropriate form subdivisions if available. Useful ones include:
 - \$vComputer games
 - \$vDatabases
 - \$vInteractive multimedia
 - \$vJuvenile software
 - \$vSoftware.
- If there are no suitable subdivisions available, or if the resource has no particular subject matter, try to find a suitable form heading, e.g. 'Computer games', 'Computer graphics', 'Children's software'.

Extra fields for specific types of content

- Please remember to include any extra fields required for special types of content. For instance:
 - Cartographic material usually requires 034 (Coded cartographic mathematical data), 043 (Geographic area code), 255 (Cartographic mathematical data) and 522 (Geographic coverage note).
 - Sound recordings may require 306 (Playing time).
 - Audio and video performances may benefit from 508 (Creation/production credits) and/or 511 (Participant or performer note).
 - Theses require 502 (Dissertation note).
- Please consult the relevant [OLIS documentation](#).

Elements for carriers

007: Physical description fixed field

- To add an 007 field, enter the field tag in the usual way and use Ctrl-F to open the form. You will first be asked to choose the value for 007/00, since this determines the meaning of the other positions, and should always choose 'c' (= Electronic resource).
- You are also required to provide a specific value for 007/01 (Material designation). The options are:
 - b (= Chip cartridge) – applies to flash drives, solid-state portable drives and games cartridges
 - c (= Computer optical disc cartridge)
 - d (= Computer disc, type unspecified)
 - e (= Computer disc cartridge, type unspecified) – applies to portable hard drives, as long as the caddies contain ordinary hard drives (i.e., rotating platters) rather than solid-state drives
 - k (= Computer card) – applies to memory cards
 - m (= Magneto-optical disc) – according to the MARC standards, this is the appropriate value for rewritable CDs and DVDs; however, CD-MO technology has been superseded by CD-RW technology, which is purely optical.
 - o (= Optical disc) – applies to all current types of CD and DVD.
 - z (= Other) – probably the best option for e-readers
 - various obsolescent media: a (= Tape cartridge); f (= Tape cassette); h (= Tape reel); j (= Magnetic disk, i.e. floppy disk)
 - r (= Remote) - for online resources, so not applicable
 - u (= unspecified) – do not use
 - | (= No attempt to code) – do not use.
- All the other values can be left as '|' (= no attempt to code). Elements such as 'colour' and 'sound' will be recorded elsewhere if important.
- It is seldom worth adding other types of 007 fields, e.g. 'Map' or 'Sound recording' or 'Videorecording', to reflect aspects of the resource's content, since 007 values focus on carrier rather than content (e.g. whether a map is on paper, stone or fabric) and few of them are applicable to digital carriers. Some of the few values which are applicable, e.g. whether a sound recording is mono, stereo, quadrasonic or surround-sound, can be recorded elsewhere in the record if considered important.

008/23 or 29: Form of item

- This element may be in either 008/23 or 008/29, depending on the format of the record. Its value should always be 'q' (= Direct electronic).

300: Physical description

300 \$a: Extent

- Use a 'term in common usage' [RDA 3.4.1.5], e.g. 'USB flash drive' or 'CD-ROM' or 'e-reader'. The term chosen should be sufficiently precise to give some indication of what equipment would be suitable for playback and to be reasonably 'future-proof' as new versions of existing technology are developed. Do not record just 'CD' unless the type of CD cannot easily be determined.

- If necessary and practicable, give further details in a 538 note, e.g. to clarify what kind of port or connector the device needs, e.g. 'Standard-A USB-2.0 connector'.⁴
- For uncomplicated video and audio resources, add the running time in parentheses if readily available. Use the abbreviations 'hr.', 'min.' and 'sec.' if applicable.

300 __ \$a2 CD-ROMs (135 min.)

- Add details of subunits in parentheses if the information is readily available and useful.

300 __ \$a1 USB flash drive (approximately 600 pages in various pagings)
538 __ \$aUSB 2.0 flash drive with standard-A connector.

- If the carriers are of multiple types, see [RDA/MARC21 Module 6: Bibliographic records for multipart](#), especially section 6.1 for boxed sets, section 6.4 for determining whether to treat some of the material as accompanying material and 6.4a on choice of format and on how to enter multiple carrier types in field 300.

300 __ \$a1 USB flash drive (approximately 600 pages in various pagings)
538 __ \$aUSB 2.0 flash drive with standard-A connector.

300 \$b: Other physical characteristics

- See under 'Elements for contents'.

300 \$c: Dimensions

- For resources whose sizes are not absolutely standard, you will often need to record 3 dimensions, but 2 dimensions are sufficient for flat resources and 1 dimension (i.e. diameter) for flat round ones.

300 __ \$a1 memory card (82 files) ;\$c15 x 11 mm
538 __ \$aMicroSD memory card.

- For absolutely standard-size resources such as CD-ROMs in standard jewel cases, the dimensions are implied by the term used in 300 \$a, so subfield \$c is omitted.

337: Media type

- Field 337 always has the value 'computer', except for e-readers and similar, which do not require external playback equipment and are therefore 'unmediated'.
- Extra 337 fields may be required if there is important accompanying material in other media, e.g. a substantial instruction booklet; but there is no need to add 337 fields to reflect aspects of the resource's content, e.g. 'audio' or 'video', since the 337 field is concerned not with content but only with the type of equipment typically required to play the resource.

338: Carrier type

- The relevant values currently available for 338 are:
 - computer chip cartridge – applicable to devices with flash memory (other than cards), such as flash drives and solid-state portable drives⁵

⁴ Wikipedia can help with, for example, the differences between 'micro' and 'mini' and 'standard-A' and 'standard-B' USB connectors.

⁵ Some agencies confine 'computer chip cartridge' to certain more or less obsolete carriers which were commonly known as 'cartridges'. However, John Attig, who was involved in creating the RDA definitions, wrote on the RDA-L (19/5/15): "My own opinion is that the typical USB drive should be considered a specific type of computer chip cartridge; as far as I can tell, it fits the definition of that carrier type ... I would consider the actual flash memory storage medium to be a computer chip rather than a disk or card; and if the chip is embedded into a housing that includes the interface connectors, then I would characterize the whole thing as a cartridge."

- computer disc – e.g. CD-ROMS, DVD-ROMs, rewritable CDs and DVDs.
- computer disc cartridge – applicable to portable hard drives, as long as the caddies contain ordinary hard drives (i.e., rotating platters) rather than solid-state drives
- computer card
- computer tape cartridge
- computer tape cassette
- computer tape reel
- object – the best option for e-readers

Examples:

For documents on a flash drive:

```
336 __ $atext$2rdacontent
337 __ $acomputer$2rdamedia
338 __ $acomputer chip cartridge$2rdacarrier
```

For a CD-ROM containing text documents, a database, videos and maps:

```
336 __ $atext$2rdacontent
336 __ $acomputer dataset$2rdacontent
336 __ $atwo-dimensional moving image$2rdacontent
336 __ $acartographic image$2rdacontent
337 __ $acomputer$2rdamedia
338 __ $acomputer disc$2rdacarrier
```

For a 3-D videogame with accompanying instruction book:

```
336 __ $athree-dimensional moving image$2rdacontent
336 __ $acomputer program$2rdacontent
336 __ $atext$2rdacontent
337 __ $acomputer$2rdamedia
337 __ $aunmediated$2rdamedia
338 __ $acomputer disc$2rdacarrier
338 __ $avolume$2rdacarrier
```

344: Sound Characteristics; 346: Video Characteristics; 347: Digital File Characteristics

- Electronic media always require a 347 field for digital file characteristics, and if they contain important audio or audiovisual files they require a 344 field as well. They will occasionally require a 346 field, if they contain videos which use a named broadcast standard.
- Although these fields each have many possible elements, we require only fairly simple elements for which information is normally readily available. If you cannot get the information for an element from label, case, accompanying material or similar, just omit the element. Do not play a resource just to determine 34X values.
- For complete and up to date lists of available terms, please see RDA 3.16 (for 344), RDA 3.18 (for 346) and RDA 3.19 (for 347). If no suitable term is available in the lists, you may use another term.
- Each 34X field must end with a subfield \$2 containing the code `rda`, unless it includes a value not taken from the RDA lists.
- Aleph templates supply typical 34X values for the materials for which the template was designed, but you may need to change the values.

- Aleph has helpful picklists for each 34X field (opened by Ctrl+F8), which give appropriate sets of values for common types of material. But because of the large number of possible permutations, these lists are not exhaustive.
- All 34X fields may be repeated as necessary to reflect different aspects or components of the resource. All subfields are also repeatable, but it tends to be simpler to make separate fields than to have several instances of a subfield in a single field, especially given the availability of Aleph's picklists. If you wish to repeat any subfield, you will need to add the subfield and its data manually.

Field 344

- Subfield \$a (Type of recording) will have the value 'digital'.
- Subfield \$b (Recording medium) will have the value 'optical' for almost all CDs, DVDs and Blu-ray discs, 'magneto-optical' for older CD-MO rewritable CDs, or 'magnetic' for portable hard drives of the rotating platter type. None of these suggested values seems appropriate for devices using flash memory (e.g. flash drives, solid state drives and memory cards), but one may use 'another concise term'; perhaps 'flash' would be the best one. (If using a term from outside the set RDA vocabulary, you should omit '\$2rda'.)
- Subfield \$g (Configuration of playback channels) can have one of the values 'mono', 'stereo', 'quadraphonic' or 'surround', if the information is readily available.

Field 346

- Subfield \$b (Broadcast standard) is the only subfield which might be applicable to digital resources. It contains codes such as NTSC (currently used in Canada, Japan, Mexico, Philippines, Taiwan, U.S.), PAL (currently used in most of Europe, most of Africa, China, India, Australia, New Zealand, North Korea) or SECAM (currently used in Eastern Europe and France). If the code is not readily available, omit the field. Do not guess the code from the place of publication or distribution.

Field 347

- Subfield \$a (File type) will have the value 'audio file', 'data file', 'image file', 'program file', 'text file' or 'video file'.
 - Do not use the value 'image file' for images of alphanumeric material, e.g. PDF documents; these should have the value 'text file'.
 - 'data file' is appropriate only for file formats designed for data manipulation, such as databases and spreadsheets. File formats designed just for reading and writing should have the value 'text file'.
 - 'video file' covers both image-only videos and videos with audio content.
- Subfield \$b (Encoding format) is used only when the file formats are known and important.
 - Common audio file formats: CD audio, DVD audio, MP3, RealAudio, SACD, WAV
 - Common image file formats: BMP, GIF, JPEG, JPEG2000, PNG, TIFF
 - Common text file formats: HTML, MS Word, PDF, RTF, SGML, XHTML, XML
 - Common video file formats: Blu-ray, DVD video, HD-DVD, MPEG-4, QuickTime, RealVideo, SVCD, VCD, Windows media
 - Common data file formats: Access, Excel, Lotus, XML.

- Subfield \$e (Regional encoding) may contain codes for DVD video files (e.g. 'region 1), Blu-ray files (e.g. 'region A') or games (e.g. 'PAL' or 'NTSC-U'), if readily available.

Examples:

For a CD-ROM containing PDF and Word documents:

```
347 __ $atext file$bPDF$2rda
347 __ $atext file$bMS Word$2rda
```

or

```
347 __ $atext file$bPDF$bMS Word$2rda
```

For a CD-ROM containing a PDF version of a book and Excel spreadsheets for users to practice on:

```
347 __ $atext file$bPDF$2rda
347 __ $adata file$bExcel$2rda
```

For a videogame with quadraphonic sound, using the PAL broadcast standard:

```
344 __ $adigital$boptical$gquadraphonic$2rda
346 __ $bPAL$2rda
347 __ $aprogram file$ePAL$2rda
347 __ $aaudio file$2rda
347 __ $avideo file$2rda
```

or

```
344 __ $adigital$boptical$gquadraphonic$2rda
346 __ $bPAL$2rda
347 __ $aprogram file$avideo file$aaudio file$ePAL$2rda
```

538: System requirements note

- Give details of hardware and software requirements if readily available and not obvious from the terms used in field 300. If there is a comprehensive statement on the resource it may be simpler to transcribe it entirely than to decide which bits are important.

For a videogame

```
538 __ $a System requirements: Windows XP (SP3), Windows Vista (SP1 or Windows 7; 2 GHz Intel Core 2 Duo or 2 GHz AMD Athlon 64 X2 or better; 2 GB or more RAM (2 GB for Windows Vista (SP1)); 8x DVD drive or faster; at least 9 GB of free hard disc space; DirectX 9.0c compatible video card (512 MB, details of supported video cards on container); DirectX 9.0c compatible sound card; may be controlled by keyboard, mouse, or Microsoft XBox 360 Controller for Windows.
```

- Also use 538 for details of ports or connectors required, if known,⁶ and for any further details which may be important for storage or conservation, bearing in mind that digital hardware and software often has quite a short life.

```
300 __ $a1 memory card ;$c15 x 11 mm
538 __ $aMicroSD card.
```

```
300 __ $a1 portable hard drive ;$ccase 20 x 15 x 3 cm
538 __ $aSolid-state hard drive with standard-A USB 3.0 connector.
```

⁶ Wikipedia can help with, for example, the differences between 'micro' and 'mini' and 'standard-A' and 'standard-B' USB connectors.

02X: ISBNs, ISSNs, product barcodes and other identifiers

- ISBNs and similar identifiers relate to the manifestation as a whole rather than to its content or carrier aspect.
- Numbers presented as ISBNs or ISSNs should be recorded in the usual ways.
- International Standard Music Numbers (ISMNs) might turn up on electronic scores or 'sheet' music.
 - They use field 024. First indicator is '2', second is blank.
 - They are entered like ISBNs, with no hyphens, spaces or captions.
- Product barcodes, usually found on the back of the case, are Universal Product Codes (UPCs) if 12-digit and International Article Numbers (EANs) if 13-digit.
 - They now form part of a very widespread integrated system of Global Trade Item Numbers (GTINs) which incorporates ISBNs and ISSNs, so their importance is increasing and they should always be recorded unless identical to an ISBN, ISSN or ISMN already recorded.
 - They use field 024, with first indicator '1' for UPCs and '3' for EANs. Second indicator is blank.
 - They are entered like ISBNs, with no hyphens, spaces or captions.
- If a number is presented as a 'publisher number', 'matrix number' or 'videorecording number', refer to the MARC standards for field 028.
- Numbers of unspecified types found on the resource are best recorded as quoted notes.

Example

LDR	00000nmm a2200577 i 4500
007	cb
008	150312s2012 enk q m eng d
0243	a 0799928878371
040	a UkOxU b eng e rda c UkOxU
0410	a enk a pol a lat a chu a yid h pol h lat h chu h yid
24504	a The material culture of Galicia : b a virtual museum / c compiled by Joan White.
264 1	a London : b Museum of Material Culture Press, c 2012.
300	a 1 portable hard drive : b colour, sound ; c case 20 x 15 x 3 cm
336	a still image 2 rdacontent
336	a performed music 2 rdacontent
336	a text 2 rdacontent
336	a three-dimensional moving image 2 rdacontent
337	a computer 2 rdamedia
338	a computer chip cartridge 2 rdacarrier
344	a digital b flash
347	a image file 2 rda
347	a audio file 2 rda
347	a text file b PDF 2 rda
347	a video file 2 rda
500	Title from casing of hard drive.
520	a "Artefacts, clothing, dwellings, songs and chants, paintings, liturgical and other books, travellers' writings, archive photos and a virtual tour of a reconstructed village in pre-war Galicia"--Case.
538	a Solid-state hard drive with standard-A USB 3.0 connector.
546	Introductory material, captions, etc. and some texts in English; other texts in various languages, including Polish, Latin, Church Slavonic and Yiddish, all with English translations.
650 0	a Material culture z Galicia (Poland and Ukraine) x History y 20th century.
651 0	a Galicia (Poland and Ukraine) x Civilization y 20th century.
7001	a White, Joan, d 1957- e editor.

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